



SMILETutor
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2022

PRIMARY 6 MATH TEST PAPERS

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ANGLO-CHINESE SCHOOL (JUNIOR) PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4) and shade your answer (1, 2, 3 or 4) on the
Optical Answer Sheet (OAS). (20 marks)

1. Express 12 tenths as a decimal.

- 1) 0.012
- 2) 0.12
- 3) 1.2
- 4) 12.0

2. Round 51 872 to the nearest thousand.

- 1) 50 000
- 2) 51 000
- 3) 51 900
- 4) 52 000

3. Find the value of $\frac{4}{5} \div 2$.

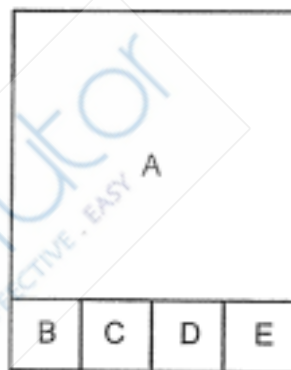
- 1) $\frac{5}{8}$
- 2) $\frac{2}{5}$
- 3) $1\frac{3}{5}$
- 4) $2\frac{1}{2}$

4. The average length of Ribbon A and B is 48 cm. The total length of Ribbon C and D is 56 cm. What is the average length of the 4 pieces of ribbon?

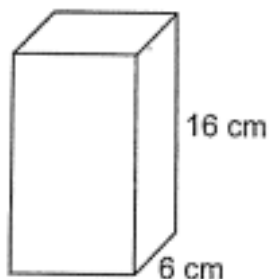
- 1) 26 cm
- 2) 38 cm
- 3) 52 cm
- 4) 76 cm

5. The figure is made up of 5 squares A, B, C, D and E. What fraction of the figure is Square D?

- 1) $\frac{1}{4}$
- 2) $\frac{1}{16}$
- 3) $\frac{1}{19}$
- 4) $\frac{1}{20}$

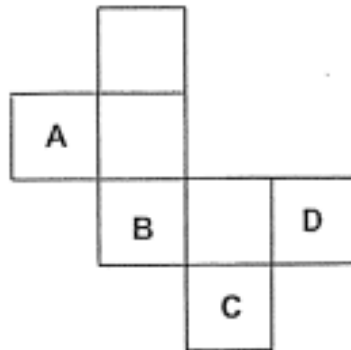


6. What is the volume of a cuboid that has a square base of side 6 cm and height 16 cm?



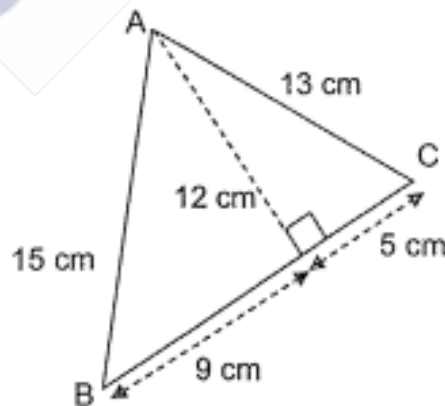
- 1) 96 cm^3
- 2) 216 cm^3
- 3) 576 cm^3
- 4) 1536 cm^3

7. Kenny wanted to fold the net below to form a cube. However, he realised that the net is incorrect. He has to remove one of the faces, A, B, C or D, from it to form the cube.



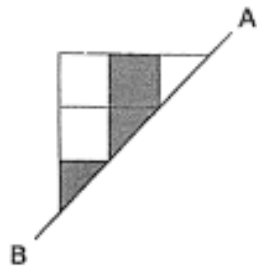
Which of the following letters representing the face that he has to remove from the net?

- 1) A
 - 2) B
 - 3) C
 - 4) D
8. Find the area of triangle ABC shown below.



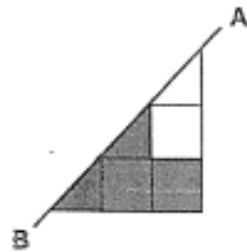
- 1) 30 cm^2
- 2) 65 cm^2
- 3) 84 cm^2
- 4) 90 cm^2

9.

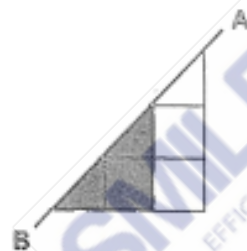


Half of a symmetric figure is shown above. AB is the line of symmetry. Which of the following completes the symmetric figure?

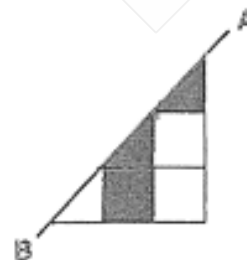
1)



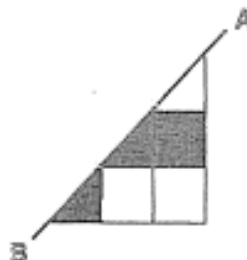
2)



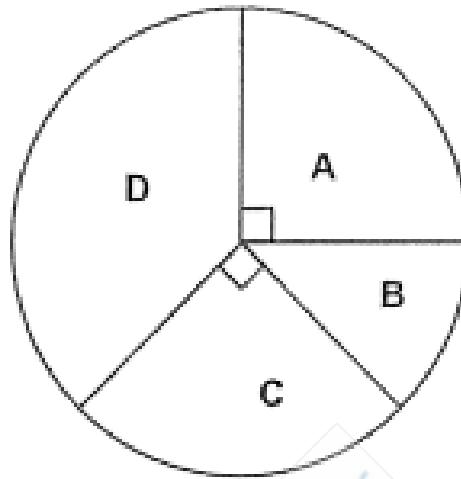
3)



4)



10. The pie chart shows the number of four types of buns sold by a shop in a day.



Which of the following tables below best represents the information in the pie chart?

1)

Types of buns	Number of buns sold
A	60
B	90
C	90
D	120

2)

Types of buns	Number of buns sold
A	90
B	120
C	90
D	60

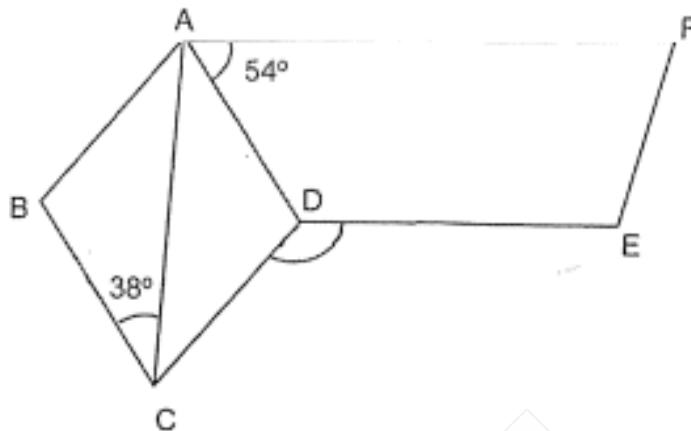
3)

Types of buns	Number of buns sold
A	80
B	40
C	80
D	70

4)

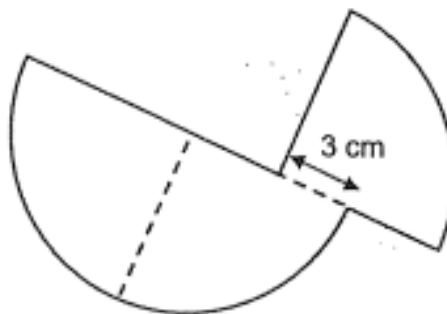
Types of buns	Number of buns sold
A	80
B	40
C	80
D	120

11. In the figure below, ABCD is a rhombus and ADEF is a trapezium. AF is parallel to DE. $\angle BCA = 38^\circ$ and $\angle DAF = 54^\circ$. Find $\angle CDE$.



- 1) 92°
- 2) 120°
- 3) 130°
- 4) 163°

12. The figure below is made up of three quarter circles of radius 7 cm. Find the perimeter of the figure. Take $\pi = \frac{22}{7}$.



- 1) 36 cm
- 2) 47 cm
- 3) 55 cm
- 4) 66 cm

13. Joshua used a calculator to multiply a 4-digit number by a 1-digit number. For the 1-digit number, he mistakenly pressed 2 instead of 3. He got the incorrect answer of 4296. What should the correct answer be?

1) 1432
2) 2148
3) 2864
4) 6444

14. There are red, blue and yellow pens in a box. The ratio of the number of red pens to blue pens is 2 : 3. The ratio of the number of yellow pens to the total number of red and blue pens is 5 : 6. What fraction of the pens in the box are blue pens?

1) $\frac{3}{5}$
2) $\frac{3}{11}$
3) $\frac{18}{55}$
4) $\frac{18}{67}$

15. A van travelled 240 km at a speed of 80 km/h. A car took $\frac{1}{2}$ h less than the van to travel the same distance. How long did the car take to cover the same distance?

1) $\frac{1}{3}$ h
2) $2\frac{1}{2}$ h
3) 3 h
4) $3\frac{1}{2}$ h

End of Booklet A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers to the units stated. (10 marks)

16. Find the value of $98 - 3 \times (17 - 3)$.

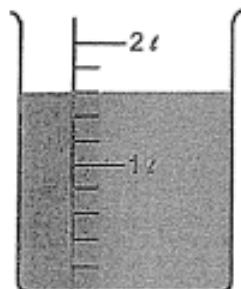
Ans : _____

17. Find the value of $70 + \frac{7}{10} + \frac{7}{1000}$.

Give your answer as a decimal.

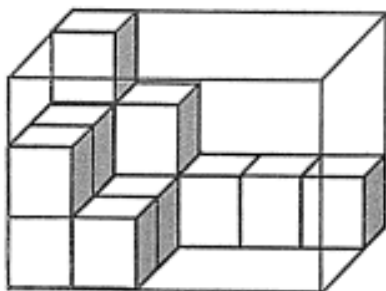
Ans : _____

18. How much water is in the container? Give your answer in millilitres.



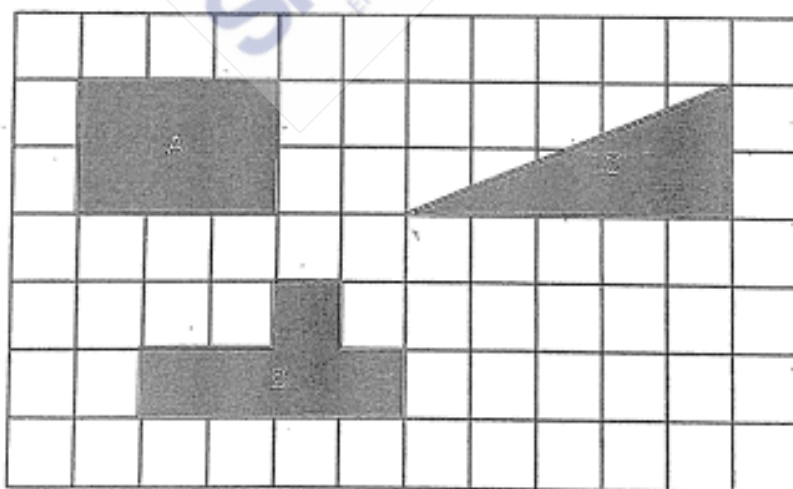
Ans : _____ ml

19. The figure shows a rectangular glass box partly filled with unit cubes. When the box is completely filled with unit cubes, how many unit cubes are there altogether?



Ans : _____

20. There are 3 shapes A, B and C drawn in a grid. Which two shapes have the same area?



Ans : _____ and _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which requires units, give your answers in the units stated. (20 marks)

21. (a) Express $y + 11 + 7y - 9 - 3y$ in the simplest form.

Ans : (a) _____

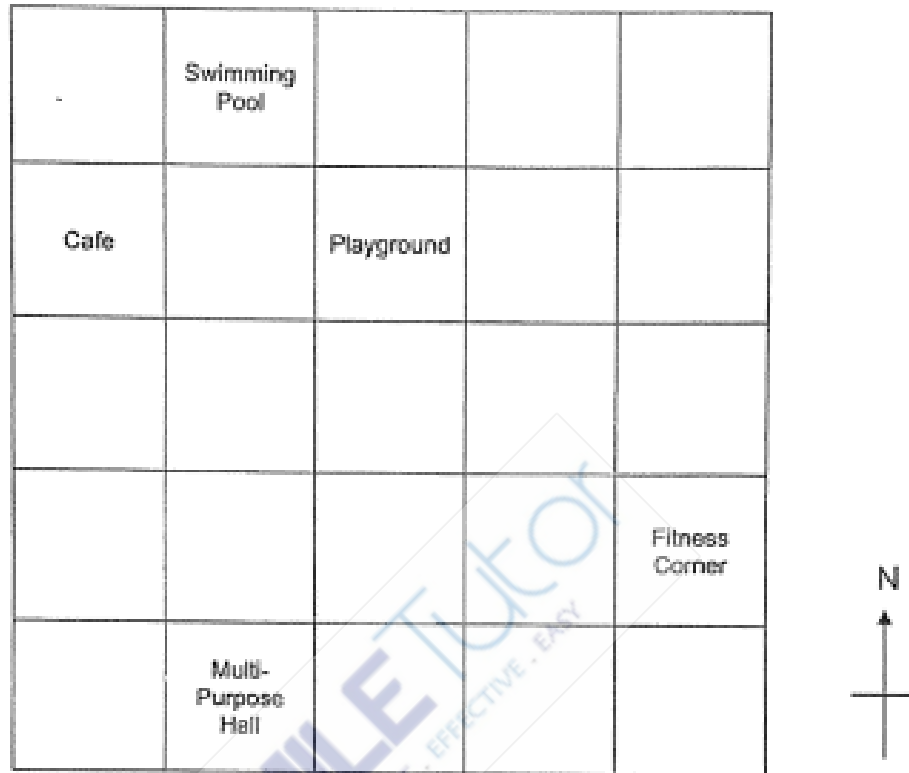
- (b) Find the value of $3w + \frac{w}{5}$ when $w = 8$.

Ans : (b) _____

22. Jamie paid \$63 for a bag and 2 pencil cases. The price of a pencil case was $\frac{2}{5}$ the price of the bag. How much did Jamie pay for the bag?

Ans : \$ _____

23. The square grid below shows the plan of the amenities in a condominium.

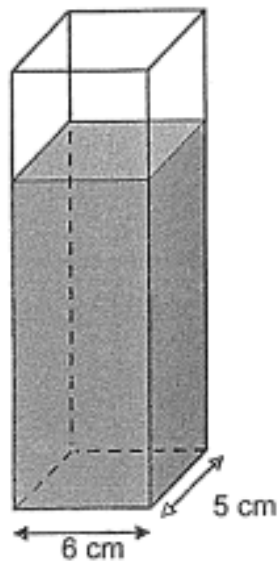


- (a) In what direction is the fitness corner from the playground?

Ans : (a) _____

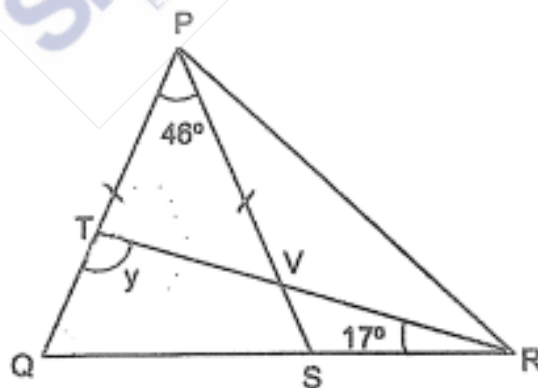
- (b) The management committee wants to place a chess table in the condominium. The location of the chess table is to be south of the cafe and north-west of the multi-purpose hall. Put a tick (✓) in the square where the chess table will be placed.

24. A rectangular tank, 6 cm long and 5 cm wide, is $\frac{4}{5}$ filled with water. It contains 600 ml of water. Find the height of the tank.



Ans : _____ cm

25. In the figure, PQS is an isosceles triangle. PVS, QSR and TVR are straight lines and PQ = PS. $\angle QPS = 46^\circ$ and $\angle TRQ = 17^\circ$. Find $\angle y$.



Ans : _____ °

26. Books in a school library are grouped according to the following four types: Humour, Fantasy, Adventure and Mystery. The pie chart represents the number of books of each type in the school library.

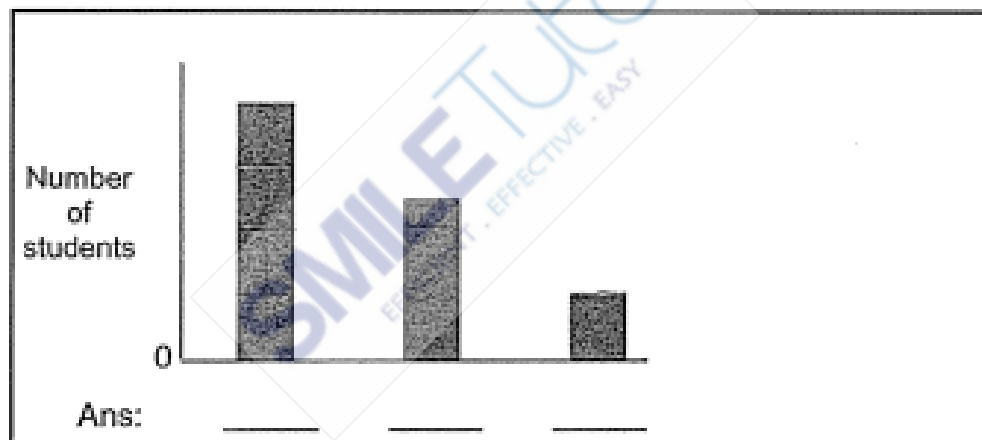


There are 150 more books of the Mystery type than books of the Humour type in the school library. How many books of the Adventure type are there?

Ans : _____

27. Students joined only one co-curricular activity (CCA) in school – art club, rugby or swimming. $\frac{1}{3}$ of them joined swimming. The number of students who joined art club was $\frac{1}{4}$ of the number who joined rugby.

The bar graph represents the number of students who joined each CCA. Label the bar graph by writing **R** for rugby, **A** for art club and **S** for swimming in the blanks below.



30. Jonathan was given a fixed amount of pocket money each month. In July, he spent \$80 and saved the rest. In August, he spent 10% less and his savings increased by 20%. How much was Jonathan's pocket money for each month?

Ans : \$ _____

End of Booklet B

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- The ratio of the number of curry puffs to the number of tuna puffs in a pastry shop was 7 : 4 at first. After 26 curry puffs were sold, the ratio of the number of curry puffs to the number of tuna puffs became 3 : 2. What was the total number of curry puffs and tuna puffs in the pastry shop at first?

Ans : _____

- Figure P is a rectangular strip of paper. Xander cut out exactly 7 identical squares from the whole strip of paper and formed Figure Q as shown below. The perimeter of Figure Q is 210 cm. Find the perimeter of the strip of paper.



Figure P

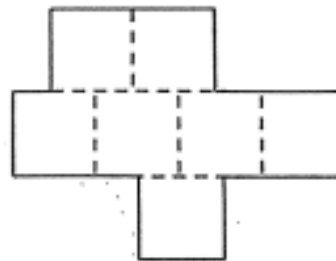
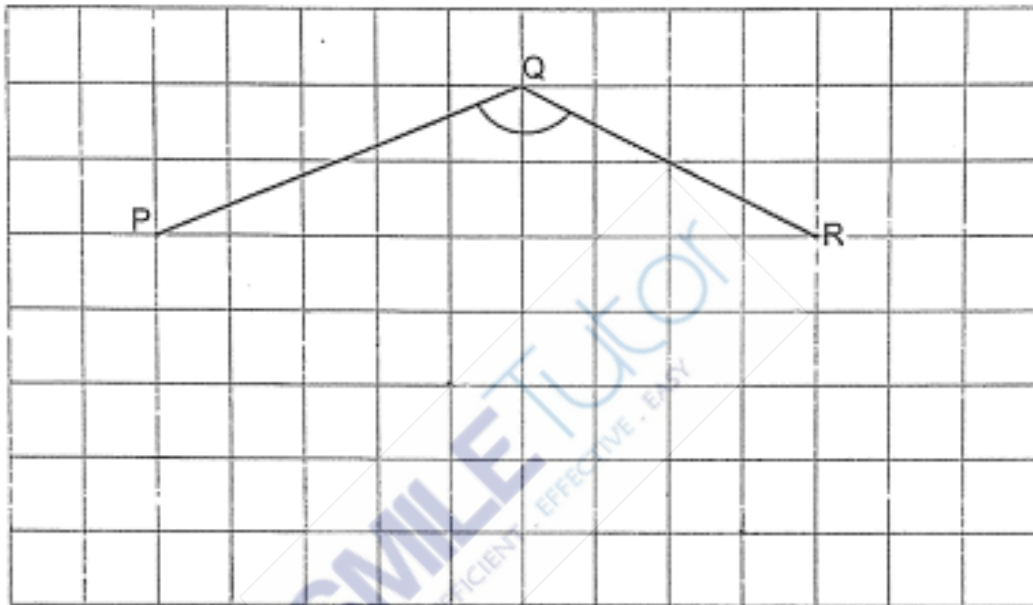


Figure Q

Ans : _____ cm

3. In the square grid below, PQ and QR are straight lines.
- (a) Measure and write down the size of $\angle PQR$.
- (b) PQ and QR are two sides of a trapezium PQRS in which QR is parallel to PS and PS is twice the length of QR. Complete the trapezium PQRS by drawing the other two sides in the square grid below.



Ans : (a) _____°

4. Miss Koh had a bag of flour. She used an equal amount of flour each day to bake bread. At the end of 8th day, $\frac{2}{5}$ of the flour was left. At the end of 10th day, the amount of flour left was 1.2 kg. How many kilograms of flour did Miss Koh have at first?

Ans : _____ kg

5. A player has to play a total of four games in Round 1 of a competition. The scores for Ahmad's first three games are shown below.

Round 1				
Game	1 st	2 nd	3 rd	4 th
Score	31	26	28	?

Ahmad will qualify for Round 2 if his average score for three of the four games is 32 or more. What is the lowest score Ahmad must get in the 4th game to qualify for Round 2?

Ans : _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. Gerald, Leon and Ali went for a jog. Gerald ran y km. Leon ran 3 km more than Gerald. Ali ran twice as far as Leon.

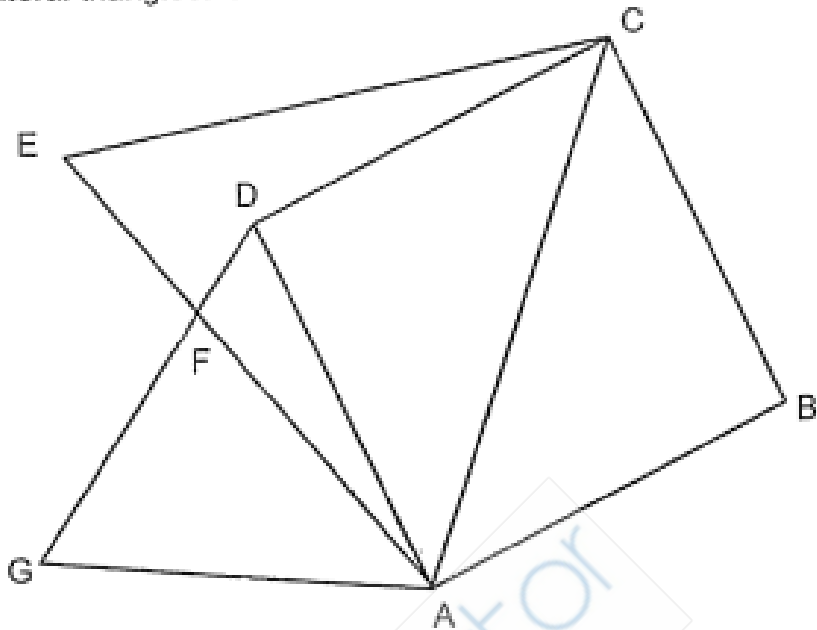
(a) Express the total distance the three boys ran in terms of y .

Ans : (a) _____

- (b) The three boys ran a total of 53 km. Find the value of y .

Ans : (b) _____ [2]

7. In the figure, not drawn to scale, ABCD is a square. ACE and DGA are equilateral triangles. Find $\angle EFG$.



Ans : _____ [3]

8. Four children played a game during recess. They had to throw as many balls into a basket within a given time. 3 points were awarded for throwing each ball into the basket and 1 point was deducted for each ball missed. The table shows the number of balls thrown into the basket and missed by three of the students.

Student	Number of balls	
	Thrown into basket	Missed
A	30	8
B	29	4
C	32	16

- (a) Which of the three students scored the most number of points?
What was the student's points?

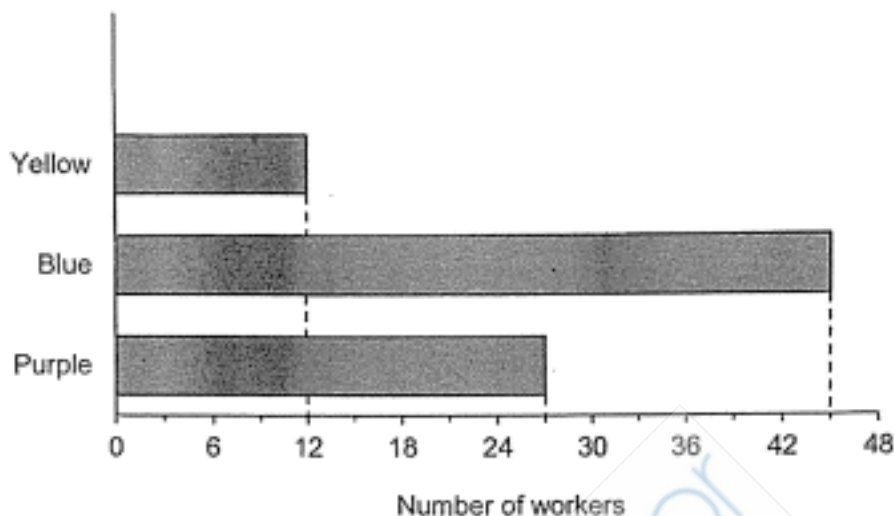
Ans : (a) student : _____

Points: _____ [1]

- (b) Student D threw the same number of balls as Student A but obtained 16 points more. How many balls did student D toss into the basket?

Ans : (b) _____ [2]

9. Mr Fam wanted to buy T-shirts for his workers. He asked them to choose one colour from yellow, blue and purple for the T-shirt. The results are shown in the graph below.



- (a) How many workers were there altogether?

Ans : _____ [1]

- (b) Mr Fam paid a total of \$384 for the T-shirts. The ^{prices}costs of Yellow, Blue and Purple T-shirts were in the ratio of 2 : 1 : 1. How much did Mr Fam pay for all the Purple T-shirts?

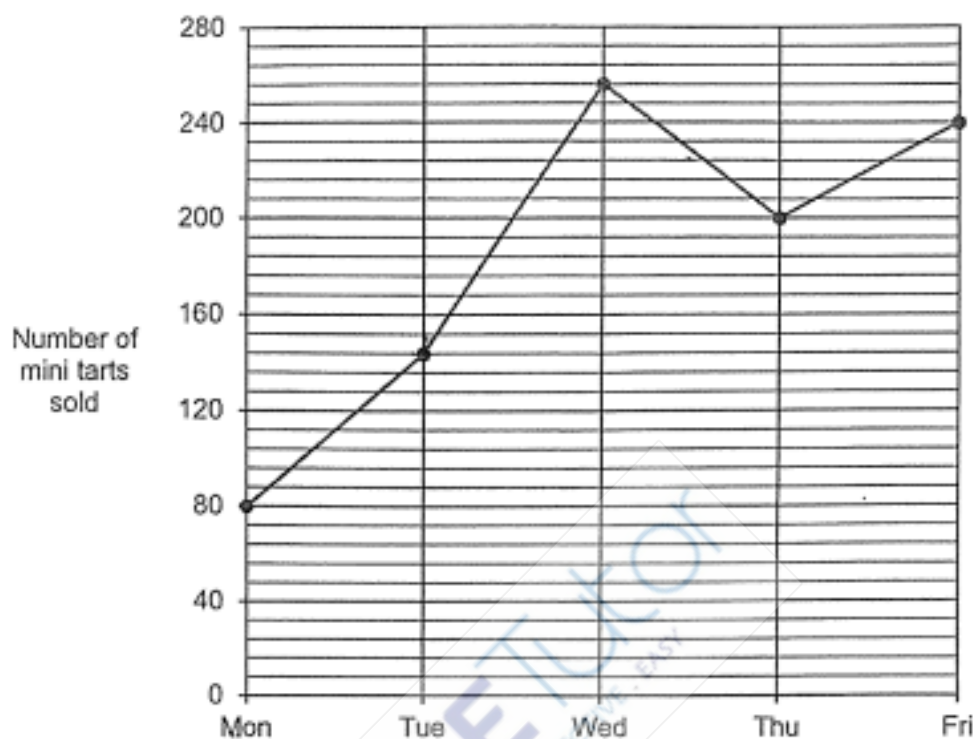
Ans : _____ [2]

10. Ron and Harry started running in opposite directions on a running trail. Ron ran at a speed of 110 m/min. At the end of 15 minutes, they were 3525 m apart. Find Harry's running speed in m/min.



Ans : _____ [3]

11. The graph below shows the number of mini tarts sold from Monday to Friday.



- (a) What was the average number of mini tarts sold from Monday to Friday?

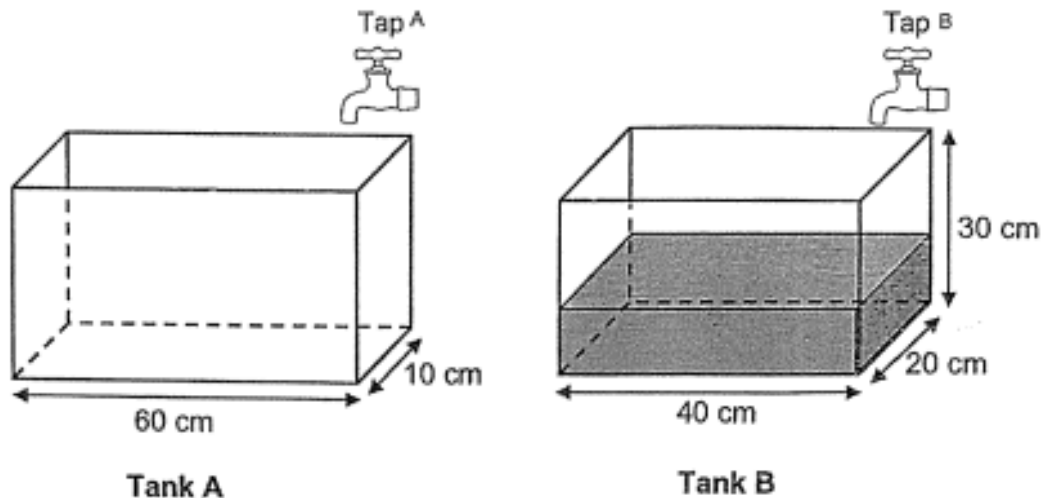
Ans: (a) _____ [2]

- (b) The average number of mini tarts sold on Saturday and Sunday was 26 more than the average number of mini tarts sold from Monday to Friday.

Write down one possible set of values for the number of mini tarts sold on Saturday and Sunday.

Ans: (b) _____ , _____ [2]

12. Two rectangular tanks are shown below.



At first, Tank A was empty and Tank B was $\frac{1}{5}$ filled with water. Tap A and Tap B were turned on at the same time and water from both taps flowed at the same rate of 1.2 litres per minute.

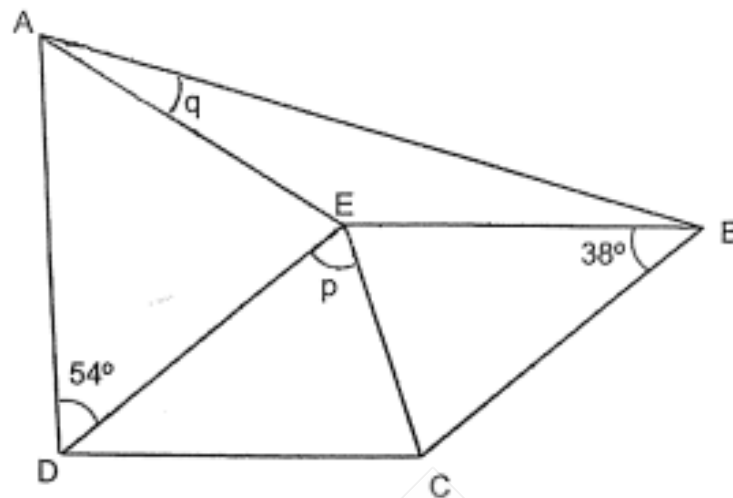
- a) What was the height of water in Tank A after 1 minute?

Ans : (a) _____ [1]

- b) How long did it take for the height of the water to be the same in both Tanks?

Ans : (b) _____ [3]

13. In the figure below, BCDE is a rhombus and $AE = DE$. $\angle EBC = 38^\circ$ and $\angle ADE = 54^\circ$



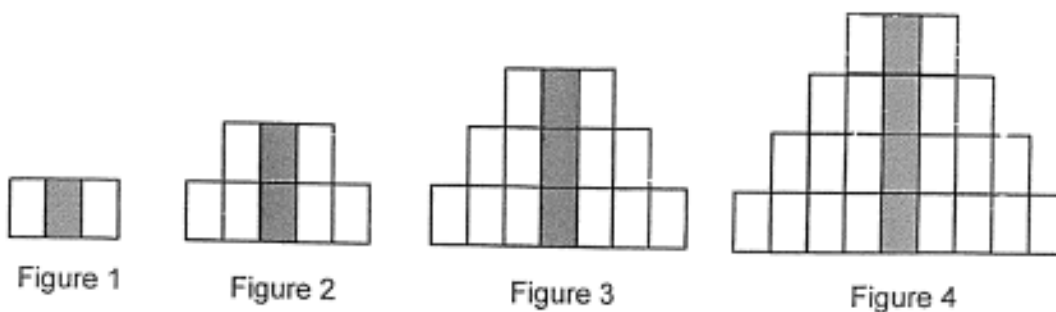
- (a) Find $\angle p$.

Ans : (a) _____ [2]

- (b) Find $\angle q$.

Ans : (b) _____ [3]

14. Some white and grey rectangles were used to form figures that follow a pattern. The first 4 figures are shown.



- (a) The table shows the number white and grey rectangles used for each figure. Complete the table for Figure 5.

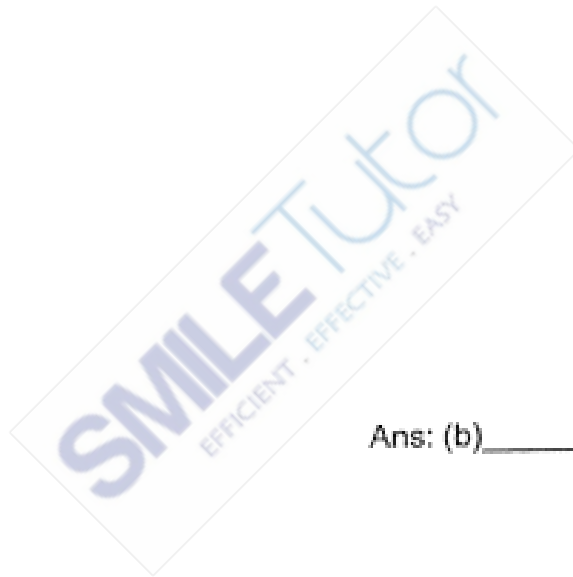
Figure Number	Number of white rectangles	Number of grey rectangles
1	2	1
2	6	2
3	12	3
4	20	4
5		

[1]

- (b) What is the total number of white and grey rectangles in Figure 12?

Ans : (a) _____ [1]

- (c) A figure in the pattern has 625 more white rectangles than grey rectangles. What is the number of white rectangles in this figure?



Ans: (b) _____ [2]

15. Mrs Tan had a box of green, blue and red beads. She had 240 green beads. 30% of her beads were blue. She had 24 fewer red beads than blue beads.

(a) What was the total number of beads she had in the box?

Ans : (a) _____ [2]

- (b) Mrs Tan's son bought her some blue beads. Her total number of beads then increased by 25%. How many blue beads did she have in the end?

Ans: (b) _____ [2]

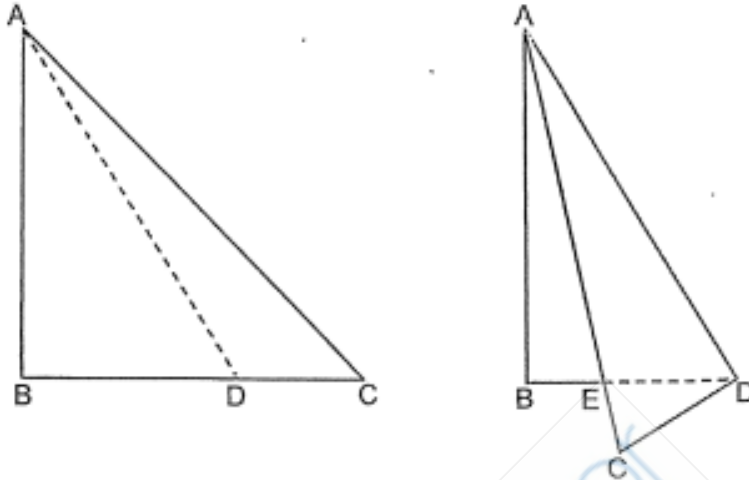
16. James used $\frac{1}{4}$ of his money to buy 3 pencil cases and 7 key chains. The cost of each pencil case is 3 times the cost of each key chain. He bought some more key chains with $\frac{5}{6}$ of his remaining money. He spent \$30.40 more on all the key chains than on all the pencil cases. How much was the cost of one key chain?



Ans : _____ [4]



17. Triangle ABC is folded along the line AD. The area of the new figure is $\frac{7}{12}$ the area of Triangle ABC. The area of Triangle ADE is 65 cm^2 . Find the area of Triangle ABC.



Ans : _____ [5]

End of Paper 2

ANSWER SHEET


PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	4	2	2	4	3	4	3	4	4

Q 11	Q12	Q13	Q14	Q15
3	3	4	3	2

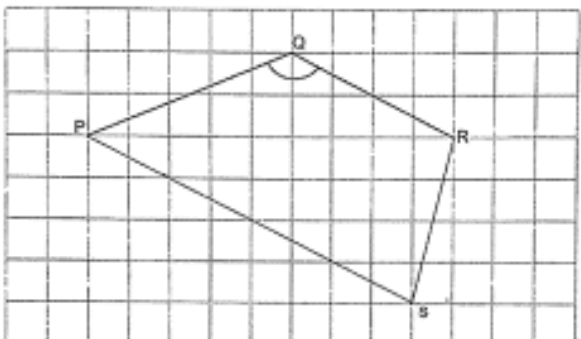
PAPER 1 BOOKLET B

Q16)	$98 - 3 \times (17-3)$ $= 98 - 3 \times 14$ $= 98 - 42$ $= 56$
Q17)	70.707
Q18)	1.6litre = 1600ml
Q19)	$3 \times 5 \times 3 = 45$
Q20)	B&C
Q21 a)	$y + 11 + 7y - 9 - 3y$ $= 5y + 2$
Q21 b)	$3 \times 8 + \frac{8}{5}$ $= 24 + \frac{8}{5}$ $= 25 + \frac{3}{5}$ $= 25\frac{3}{5}$
Q22)	$\frac{63}{9} = 7$

	$7 \times 5 = 35$
Q23)	South-East
Q23 b)	
Q24)	Height of Water = $600 \div 30 = 20$ $20 \div 4 = 5$ $5 \times 5 = 25$
Q25)	$4TQS$ $(180^\circ - 46^\circ) \div 2$ $= 134 \div 2$ $= 67$ $\angle y$ $180^\circ - 67 - 17$ $= 96^\circ$
Q26)	Humour Percent $100 - 25 - 38 - 24$ $= 75 - 67$ $= 8$ Difference percent $38 - 8$ $= 30$ $30\% = 150$ $1\% = 150 \div 30 = 5$ $29\% = 5 \times 29 = 145$
Q27)	R, S, A
Q28)	$\frac{10}{100} \times 80 = 8$ $20\% = 8$ $100\% = 8 \times 5 = 40$ Total = $80 + 40 = 120$

PAPER 2

Q1)	C:T C:T 7:4 3:2 6:4 1 unit = 26 11 units = $26 \times 11 = 286$
Q2)	1 unit = $210 \div 14 = 15$ 16 units = $15 \times 16 = 240$

Q3)	131° 
Q4)	10 units = 1.2 1 unit = $1.2 \div 10 = 0.12$ 40 units = $0.12 \times 40 = 4.8$
Q5)	Total needed = $32 \times 3 = 96$ Needed = $96 - 31 - 28 = 37$
Q6a)	Total = $4y + 9$ $(4y+9)$ km
Q6b)	$53\text{km} = 4y+9\text{km}$ $44\text{km} = 4y$ $Y = 44 \div 4 = 11$
Q7)	$\angle DAF = 60^\circ - 45^\circ = 15^\circ$ $\angle EFG = 180^\circ - 60^\circ - 15^\circ = 105^\circ$
Q8a)	Student: B $A = (30 \times 3) - 8 = 82$ $B = (29 \times 3) - 4 = 83$ $C = (32 \times 3) - 16 = 80$ Points: 83
Q8b)	$3+1 = 4$ More balls = $16 \div 4 = 4$ Tossed in = $30+4=34$
Q9a)	Total = $12+27+45=84$
Q9b)	Y:B:P:Total 2:1:1:4 1 set = $(12 \times 2) + (45 \times 1) + (27 \times 1) = 96$ No. of Sets $384 \div 96 = 4$ $4 \times 27 = \\$108$

Q10)	<p>Total Speed = $3525 \div 15 = 235$</p> <p>Harry's speed = $235 - 110 = 125$</p> <p>125m/min</p>
Q11a)	<p>Average speed:</p> $\frac{80 + 144 + 256 + 200 + 240}{5}$ $= \frac{920}{5}$ $= 184$
Q11b)	<p>$184 + 26 = 210$</p> <p>$210 \times 2 = 420$</p> <p>$200 + 220 = 420$</p> <p>Ans B: 200,220</p>
Q12a)	<p>Height</p> <p>1.2litre = 1200ml</p> <p>$1200 \div 600 = 2$</p> <p>Ans: 2cm</p>
Q12B	<p>Tank B Height / min = $1200 \div 800 = 1.5$</p> <p>Tank D Height at first = $\frac{1}{5} \times 30 = 6$</p> <p>Answer: 12min</p>
Q13a	<p>$\angle P = (180^\circ - 38^\circ) \div 2 = 71^\circ$</p>
Q13b	<p>$\angle AED = 180^\circ - 54^\circ - 54^\circ = 72^\circ$</p> <p>$\angle AEB = 360^\circ - 72^\circ - 71^\circ - 71^\circ = 146^\circ$</p> <p>$\angle Q = (180^\circ - 146^\circ) \div 2 = 17^\circ$</p>
Q14a	<p>Figure number 5 = 30 & 5</p>
Q14b	<p>$(\text{Figure number} + 1)^2 - 1 = \text{Total of figure number rectangles}$</p> <p>$(12+1) \times (12+1) - 1 = 168$</p>
Q14C	<p>Figure number</p> <p>$2\sqrt{624} = 25$</p> <p>White Triangle</p> <p>$25 \times (25+1) = 650$</p>
Q15a	<p>$40\% = 248 - 24 = 224$</p> <p>$10\% = 224 \div 4 = 56$</p> <p>$100\% = 56 \times 10 = 260$</p>
Q15B	<p>Son bought = $\frac{25}{100} \times 560$</p> <p>= 140</p> <p>In the end = $(56 \times 3) + 140 = 308$</p>

Q16)	$4 \times 3 \text{ set} = 12$ $3 \times 2 \text{ set} = 6$ $8.5 \times 3 = 25.5$ $7.25 \times 2 = 14.5$ $25.5 - 14.5 = 11$ $198 / 11 = 18 \text{ group}$ $(25.5 + 14.5) \times 18 = \720
Q17)	$40 \times 1/10 = 4\text{cm}$ $35 \times 2/5 = 14\text{cm}$ $14 - 4 = 10\text{cm different}$ $50 \times 20 - 60 \times 10 = 400 \text{ different in surface}$ $400 \times 10 / 1200 = 3 \text{ min } 20 \text{ sec}$ $1200 \times 3 \text{ min } 20\text{sec} / 1000 + 14\text{cm} = 18\text{cm}$

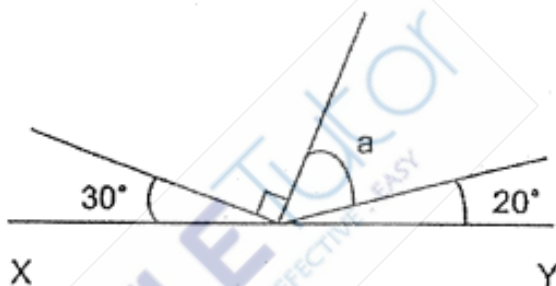
ANGLO-CHINESE SCHOOL (JUNIOR) BA1 PAPER

Section A

Questions 1 to 4 carry 1 mark each. Questions 5 to 7 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS).

(10 marks)

1. In the figure, XY is a straight line. Find $\angle a$.



- 1) 30°
- 2) 40°
- 3) 50°
- 4) 60°

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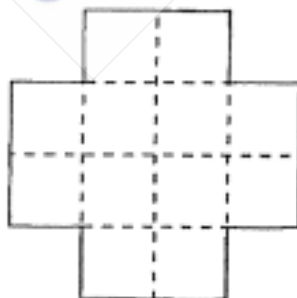
2. Steffi played 21 tennis matches in a week. Martina played 7 tennis matches in the same week. Find the ratio of the number of matches Martina played to the number of matches Steffi played.

- 1) 1 : 3
- 2) 3 : 1
- 3) 1 : 4
- 4) 4 : 1

3. Find the value of $18 \div 50 \div 5 \times 2$.

- 1) 13
- 2) 26
- 3) 38
- 4) 46

4. The figure is made up of 12 squares. The length of each of the square is 6 cm. What is the perimeter of the figure?



- 1) 24 cm
- 2) 48 cm
- 3) 72 cm
- 4) 96 cm

5. Andy was given $\frac{1}{3}$ of a cake and John was given $\frac{1}{4}$ of what was left. The remainder was then shared equally among 5 girls. What fraction of the original cake did each girl get?

1) $\frac{1}{10}$

2) $\frac{1}{20}$

3) $\frac{1}{30}$

4) $\frac{1}{40}$

6. Alyssa saves 3 times as much money as Brenda. Clara saves half of what Alyssa saves. Express Clara's savings as a fraction of all the 3 girls' total savings.

1) $\frac{3}{16}$

2) $\frac{3}{11}$

3) $\frac{3}{8}$

4) $\frac{3}{5}$

7. Sili had some beads. 40% of them were blue and the rest were yellow. She used all the blue beads and $\frac{1}{5}$ of the yellow beads to make a necklace. What percentage of her beads were used to make the necklace?
- 1) 12%
 - 2) 48%
 - 3) 52%
 - 4) 68%

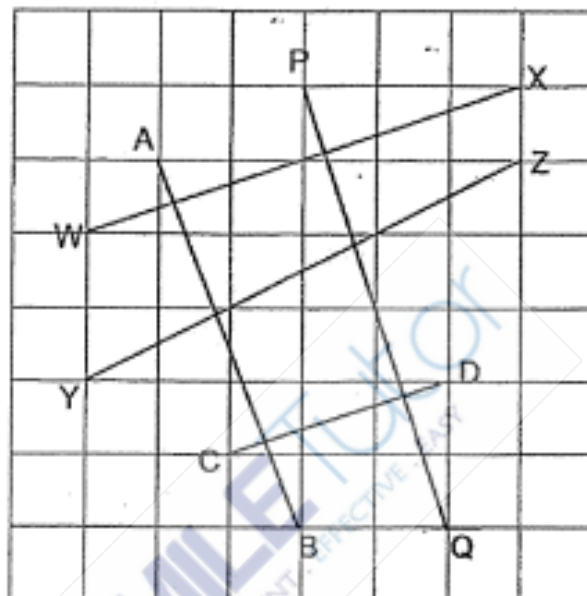


Section B1

Questions 8 to 12 carry 1 mark each. Write your answers in the spaces provided.
 For questions which require units, give your answers in the units stated.

(5 marks)

8. In the figure below, two lines are parallel. Which are the two lines?



Ans : _____ and _____

9. Find the value of $\frac{5}{6} \div \frac{3}{8}$. Express your answer as a mixed number in its simplest form.

Ans : _____

10. When a number is divided by 8, it gives a quotient of 218 and a remainder of 5. What is the number?

Ans : _____

11. Find the value of $21.52 + 40$.

Ans : _____

12. A cuboid has a square base of side 8 cm. Its height measures 9 cm. What is the volume of the cuboid?

Ans : _____ cm^3

Section B2

Questions 13 to 17 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

13. The figure shows an isosceles triangle. Find $\angle W$.



Ans : _____°

14. Bala has $\frac{3}{4}$ ℓ of lemon juice. How many days will he take to finish the lemon juice if he drinks $\frac{1}{8}$ ℓ of it every day?

Ans : _____

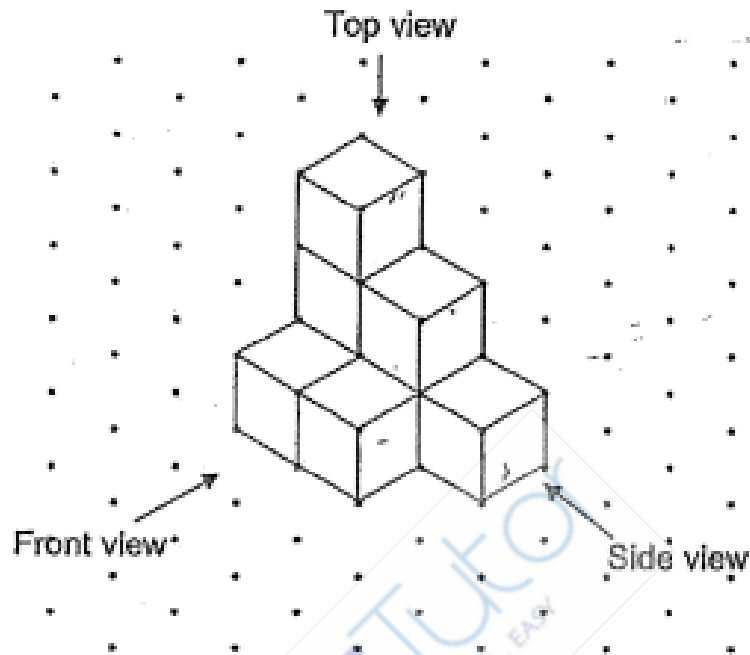
15. Ms Tan uses vinegar and oil in the ratio of 2 : 5 to make a salad dressing. She uses 75 mL of oil. How much vinegar does she use?

Ans : _____ mL

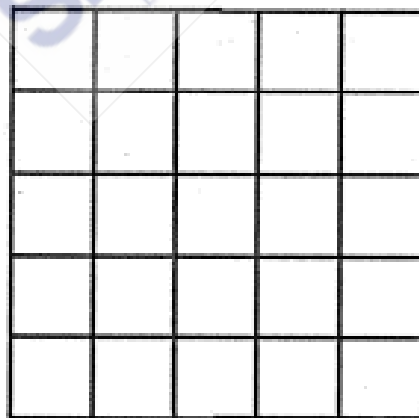
16. During a sale, a bag cost \$168 after 20% discount. What was the price of the bag before discount?

Ans : \$ _____

17. Joshua stacked 8 cubes and glued them together to form the solid below.



Draw the side view of the solid on the square grid below.



Section C

For questions 18 to 24, show your working clearly question and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question.
(25 marks)

18. Mrs Chong had 10 ℓ of juice. She poured the juice into bottles without spilling. The capacity of each bottle was $\frac{3}{8}$ ℓ,

(a) What was the greatest number of bottles Mrs Chong could fill completely with juice?

(b) How much juice was left? Give your answer in litres.

Ans : (a) _____ [1]

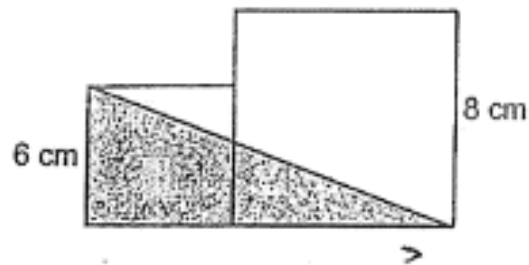
(b) _____ [2]

19. Mrs Tan had a container of sugar. The mass of the container and the sugar was 3.75 kg. She used $\frac{2}{5}$ of the sugar to bake some cakes. The mass of the container and the remaining sugar was 2.51 kg. What was the mass of the container? Give your answer in kilograms.



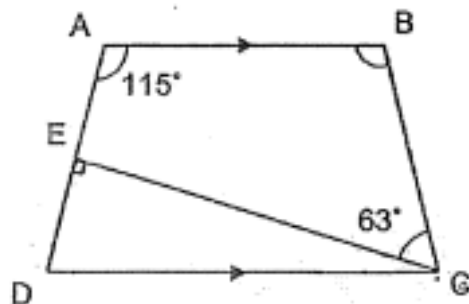
Ans : _____ [3]

20. The figure is made up of two squares of different sizes. Find the area of the unshaded part in the figure.



Ans : _____ [3]

21. ABCD is a trapezium. AB is parallel to CD. Triangle CDE is a right-angled triangle. $\angle DAB = 115^\circ$ and $\angle BCE = 63^\circ$. Find $\angle ABC$.



Ans : (a) _____ [2]

(b) _____ [2]

22. Jonathan bought a shirt and a wallet. He spent \$84 on the shirt and $\frac{2}{5}$ of the remaining money on the wallet. He was left with $\frac{1}{4}$ the amount of money he had at first. How much did Jonathan have at first?



Ans : _____ [4]

23. Devon and Oliver had a total of 275 saga seeds. Devon gave away 50 saga seeds and Oliver gave away 25% of his saga seeds. After that, the ratio of the number of Devon's saga seeds to the number of Oliver's saga seeds was 1 : 6.

(a) What fraction of Oliver's saga seeds did he give away? Give your answer in the simplest form.

(b) How many saga seeds did Devon and Oliver have altogether in the end?



Ans : (a) _____ [1]

(b) _____ [3]

24. In a shop, pens are sold only in packs. A pack of 4 blue pens costs \$5 and a pack of 5 green pens costs \$8. James bought an equal number of blue and green pens. He spent \$84 more on the green pens than the blue pens. How many blue pens did he buy?




Ans : _____ [4]

End of Paper

ANSWER SHEET

Section A Q1	2
Section A Q2	1
Section A Q3	3
Section A Q4	4
Section A Q5	1
Section A Q6	2
Section A Q7	3

Section B1 Q8	WX and CD
Section B1 Q9	$\frac{5}{6} \div \frac{3}{8} = \frac{5}{6} \times \frac{8}{3}$ $= \frac{20}{9}$ $= 2 \frac{2}{9}$
Section B1 Q10	1749
Section B1 Q11	$21.52 \div 4 \div 10$ $= 5.38 \div 10$ $= 0.538$
Section B1 Q12	$8 \times 8 \times 9 = 64 \times 9 = 576 \text{ cm}^3$
Section B2 Q13	$\angle w = 180^\circ - 38^\circ - 38^\circ = 104^\circ$
Section B2 Q14	$\frac{3}{4} \div \frac{1}{8} = \frac{3}{4} \times \frac{8}{1} = 6$

Q15)	$\frac{v}{2} : \frac{0}{5}$ $75 \div 5 = 15$ $15 \times 2 = 30ml$
Q16)	$80\% \rightarrow 168$ $10\% \rightarrow 21$ $100\% \rightarrow \$210$
Q17)	

SECTION C

Q18)	$a) 10 \div \frac{3}{8} = \frac{10}{1} \times \frac{8}{3} = \frac{26}{1} \times \frac{3}{8} = \frac{39}{4}$ $= \frac{80}{3} = 9\frac{3}{4}$ $= 26\frac{2}{3}$ <p>Ans : 26</p> $b) \frac{3}{8} \times \frac{2}{3} = \frac{1}{4} \ell \qquad 10 - 9\frac{3}{4} = \frac{1}{4} \ell$
	$3.75 - 2.51 = 1.24$ $1.24 \div 2 = 0.62$ $0.62 \times 5 = 3.10$ $3.75 - 3.10 = 0.65 \text{ kg}$
Q20)	$\text{Area of } A = 6 \times 14 \times \frac{1}{2} = 42$ $\text{Area of } 6 \times 6 = 36$ $\text{Area of } 8 \times 8 = 64$

	$\text{Area of fig} = 64 + 36 = 100$ $\text{Area of unshaded} = 100 - 42 = 58 \text{ cm}^2$
Q21)	$\angle EDC = 180^\circ - 115^\circ = 65^\circ$ $\angle ECD = 180^\circ - 90^\circ - 65^\circ = 25^\circ$ $\angle ABC = 360^\circ - (115^\circ + 65^\circ + 63^\circ + 25^\circ) = 92^\circ$
Q22)	$7u = 84$ $1u = 12$ $12u = 12 \times 12$ $= \$144$
Q23)	<p>a) $\frac{25}{100} = \frac{1}{4}$</p> <p>b) $8u + 1u + 50 = 275$ $9u + 50 = 275$ $275 - 50 = 9u$ $225 = 9u$ $1u = 25$ $7u = 25 \times 7 = 175 \text{ saga seeds}$</p>
Q24)	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\begin{array}{l} \text{X4} \left(\begin{array}{l} 5g \longrightarrow 8 \\ 20g \longrightarrow 32 \end{array} \right.$ </div> <div style="text-align: center;"> $\text{x5} \left(\begin{array}{l} 4b \longrightarrow 5 \\ 20b \longrightarrow 25 \end{array} \right.$ </div> </div> $32 - 25 = 7$ $84 \div 7 = 12 \text{ sets}$ $12 \times 20 = 240 \text{ blue pens}$

ANGLO-CHINESE SCHOOL (JUNIOR) SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4) and shade your answer (1, 2, 3 or 4) on the
 Optical Answer Sheet (OAS). (20 marks)

1. Which of the following is twenty thousand and ninety in numerals?

- 1) 2 090
- 2) 20 090
- 3) 20 900
- 4) 200 090

2. In the number line below, what is the value of the reading at A?



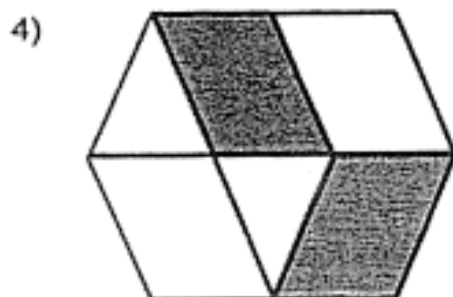
- 1) 1.65
- 2) 1.75
- 3) 1.85
- 4) 1.95

3. Which of the following is the same as 7090 cm?

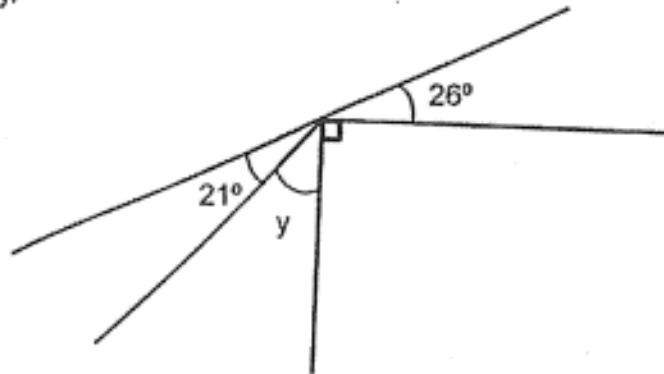
- 1) 7 m 9 cm
- 2) 7 m 90 cm
- 3) 70 m 9 cm
- 4) 70 m 90 cm

4. A movie started at 1.45 p.m. and ended at 4.25 p.m. How long was the movie?
- 1) 2 h 20 min
 - 2) 2 h 40 min
 - 3) 3 h 20 min
 - 4) 3 h 40 min
5. There are 56 tarts in a box. 24 of them are peach tarts while the rest are lemon tarts. What is the ratio of the number of lemon tarts to that of peach tarts in the box?
- 1) 3 : 4
 - 2) 4 : 3
 - 3) 3 : 7
 - 4) 7 : 3
6. The sum of 4 numbers is 540. The average of the first 3 numbers is 86. What is the value of the fourth number?
- 1) 49
 - 2) 282
 - 3) 291
 - 4) 454
7. Which one of the following fractions is smaller than $\frac{3}{4}$?
- 1) $\frac{4}{5}$
 - 2) $\frac{7}{9}$
 - 3) $\frac{9}{12}$
 - 4) $\frac{15}{21}$

8. Which of the following shows $\frac{2}{5}$ of the figure shaded?

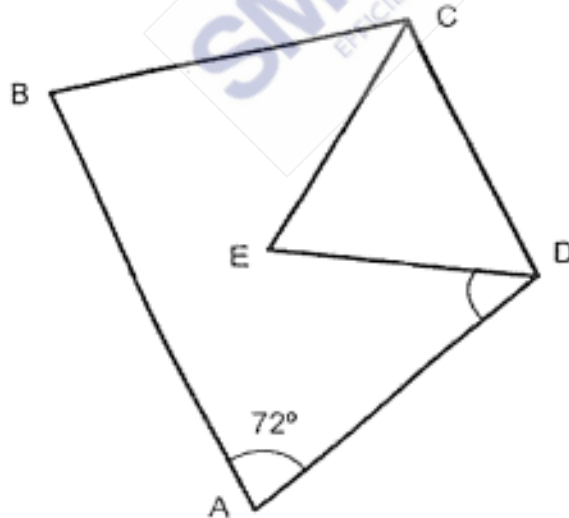


9. In the figure below, all lines are straight lines
Find $\angle y$.



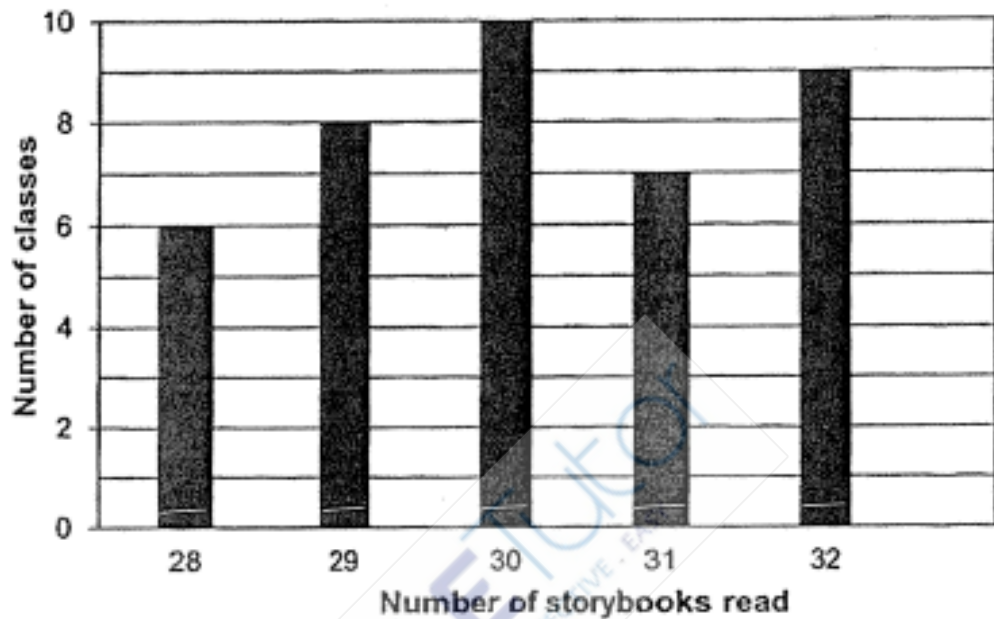
- 1) 43°
- 2) 47°
- 3) 64°
- 4) 67°

10. In the figure, CDE is an equilateral triangle. ABCD is a trapezium. AB is parallel to CD and $\angle DAB = 72^\circ$. Find $\angle ADE$.



- 1) 48°
- 2) 60°
- 3) 63°
- 4) 72°

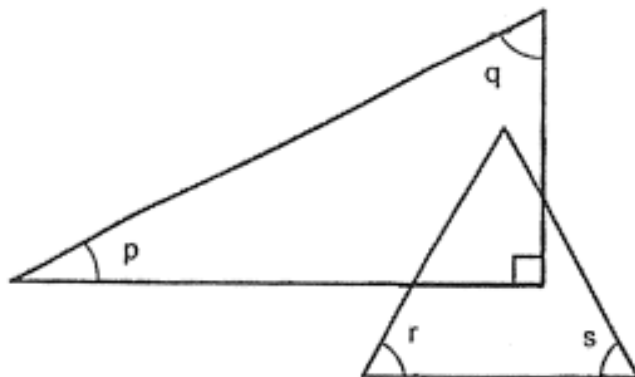
11. During a reading week, the number of books read by every classes of a school was recorded. The graph below shows the data collected.



Find the percentage of classes in the school which read 30 storybook or more during the reading week?

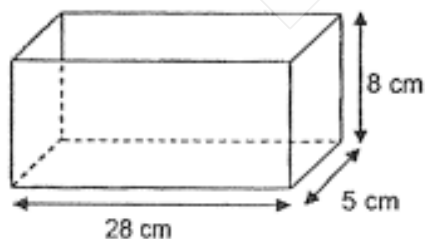
- 1) 35%
- 2) 40%
- 3) 60%
- 4) 65%

12. The figure below is made up of a right-angled triangle and an equilateral triangle.

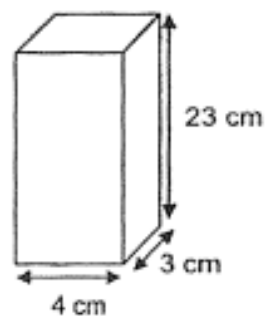


Which of the following is true?

- 1) $\angle p = \angle q = \angle r = \angle s$
 - 2) $\angle p + \angle q$ is greater than $\angle r + \angle s$
 - 3) $\angle p + \angle q + \angle r + \angle s = 150^\circ$
 - 4) $\angle p + \angle q + \angle r + \angle s = 210^\circ$
13. Tank X was completely filled with water. Eddy poured the water from Tank X into Tank Y without spilling until Tank Y is filled to the brim. How much water was there left in Tank X?



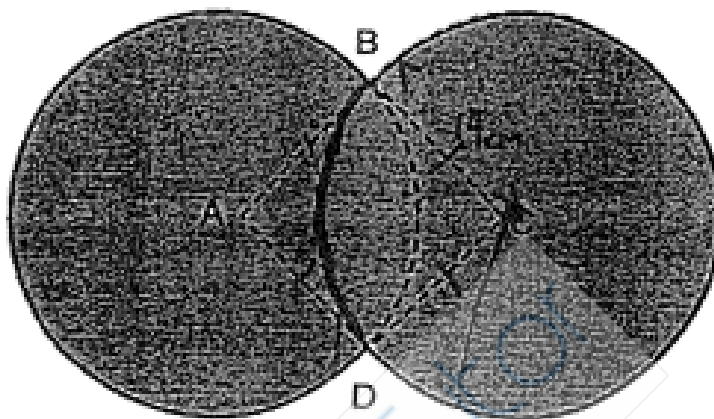
Tank X



Tank Y

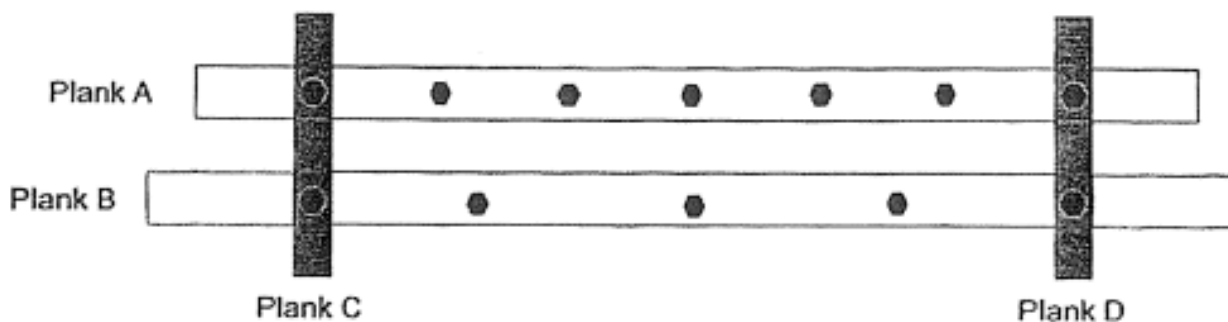
- 1) 276 cm^3
- 2) 844 cm^3
- 3) 856 cm^3
- 4) 904 cm^3

14. The shaded figure below is formed by two identical circles with centres at A and C. ABCD is a square and the length of AB is 14 cm. Find the perimeter of the shaded figure. (Take $\pi = \frac{22}{7}$)



- 1) 66 cm
- 2) 122 cm
- 3) 132 cm
- 4) 176 cm

15. Four planks A, B, C and D are nailed together to make a frame as shown below. The holes in Plank A and Plank B are evenly spread out such that Plank A and Plank B are divided into equal parts.



Plank B is 360 cm long. What is the length of Plank A?

- 1) 240 cm
- 2) 288 cm
- 3) 320 cm
- 4) 336 cm

End of Booklet A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated.
(5 marks)

16. Find the value of $20.2 - 7.93$.

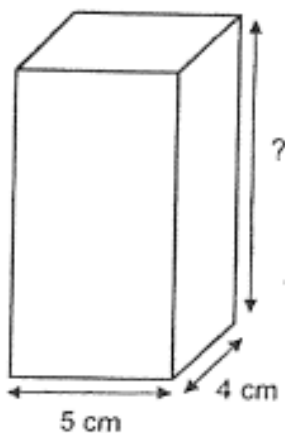
Ans : _____

17. $6 : 15 = \boxed{} : 40$

What is the missing number in the box?

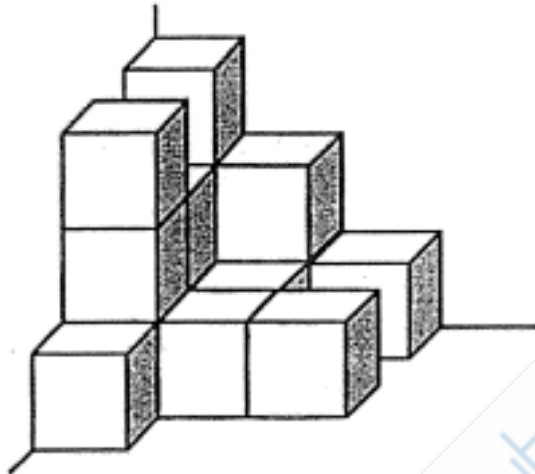
Ans : _____

18. The figure below shows a cuboid with a volume of 240 cm^3 . What is the height of the cuboid?



Ans : _____ cm

19. The figure below is made up of 1-cm cubes. What is the volume of the figure?



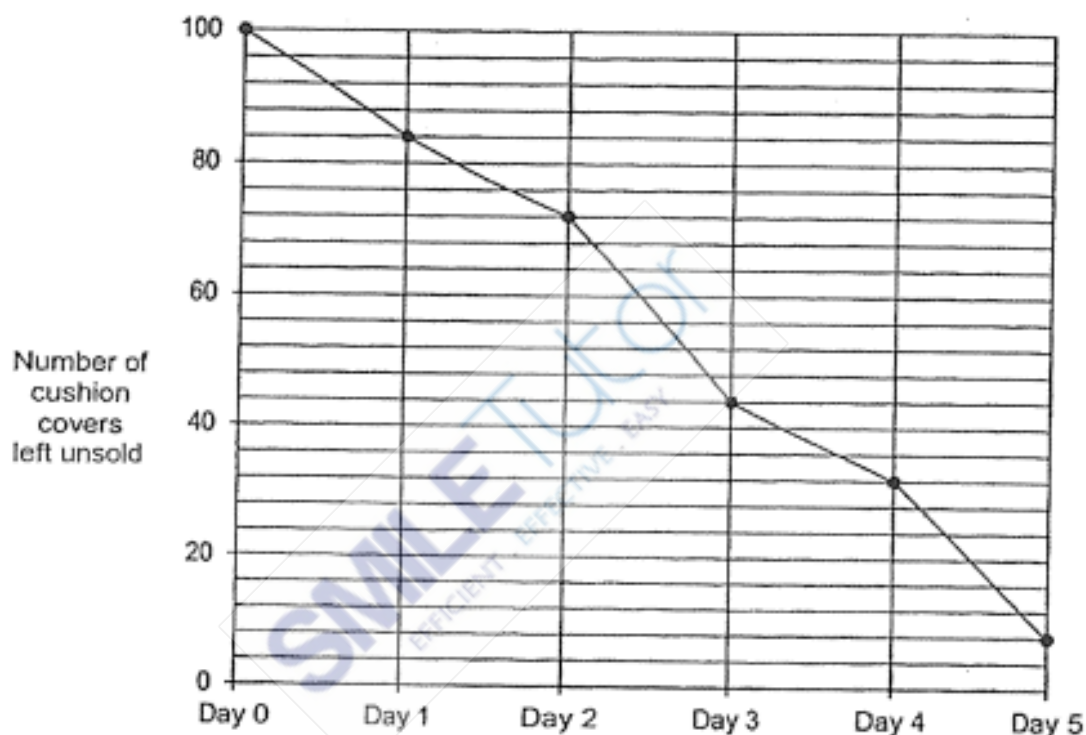
Ans : _____ cm^3

20. Kimmi paid \$6 for 15 pencils. How much does each pencil cost?

Ans : \$ _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which requires units, give your answers in the units stated. (20 marks)

21. Mrs Lee made 100 cushion covers to sell at a 5-day carnival. The line graph shows the number of cushion covers left unsold at the end of each day.



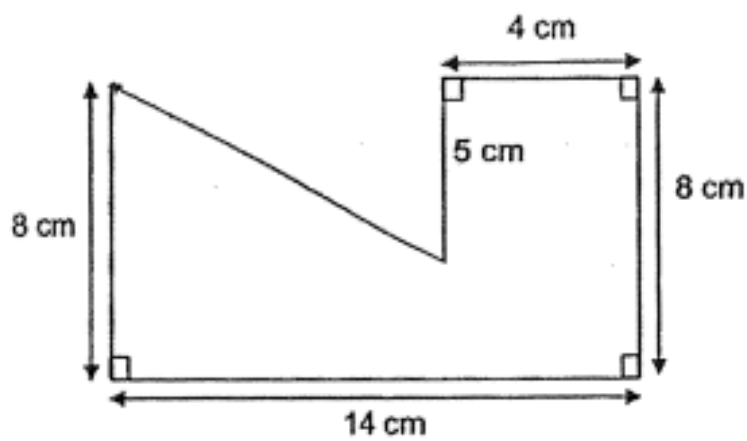
- (a) On which day was the most number of cushion covers sold?

Ans : (a) Day _____

- (b) What is the ratio of the number of cushion covers sold on Day 1 to the number of cushion sold on Day 5? Give your answer in the simplest form.

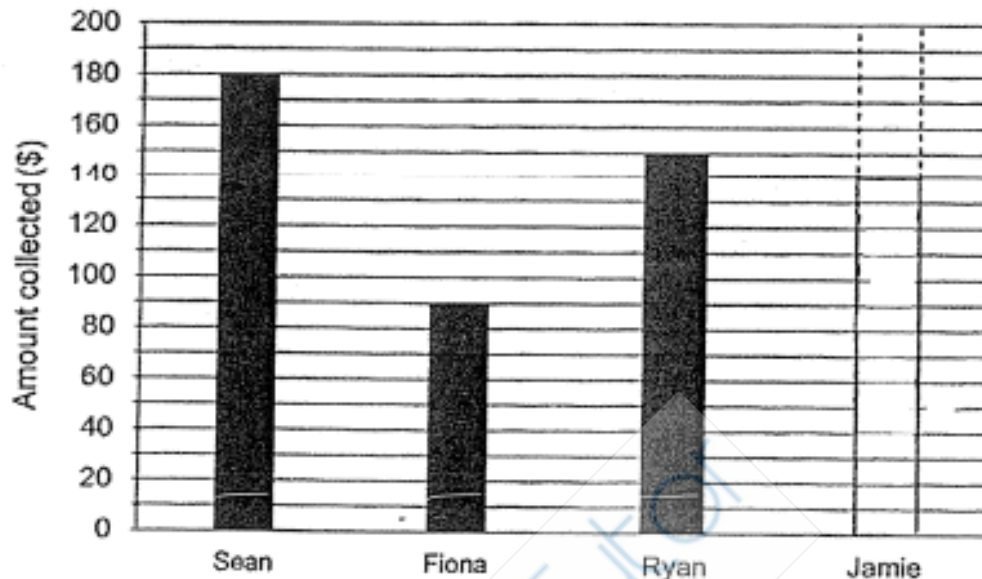
Ans : ((b) _____

22. Find the area of the figure shown below.



Ans : _____ cm^2

23. The graph shows the amount of money collected by four children in a fundraising event. The bar that shows the amount collected by Jamie has not been drawn.

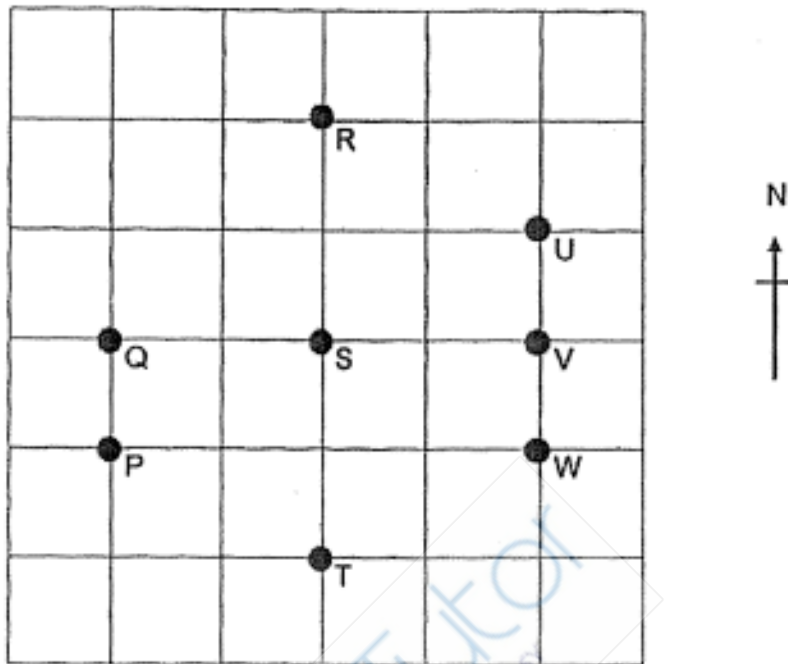


The amount of money collected by Jamie is equal to the average amount collected by the other three children. What is the amount collected by Jamie? Draw this bar in the bar graph above.

24. The average of three **different** 3-digit numbers is 140. Of the three numbers, find the largest possible number.

Ans : _____

25. Eight checkpoints on a map of a trail are shown in the square grid below.



(a) In which direction is T from Q?

Ans : (a) _____

(b) Ben is at one of the checkpoints. He is facing S. When he turns 90° clockwise, he faces U. Which checkpoint is Ben at?

Ans : (b) _____

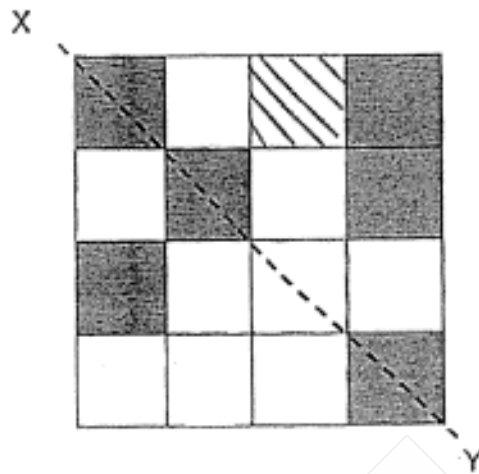
26. The price of an admission ticket to a museum is \$40. During Labour Day, a discount of 25% is given to all tickets and a further discount of \$6 is given to senior citizens. What is the total percentage discount given to senior citizens on Labour Day?

Ans : _____ %

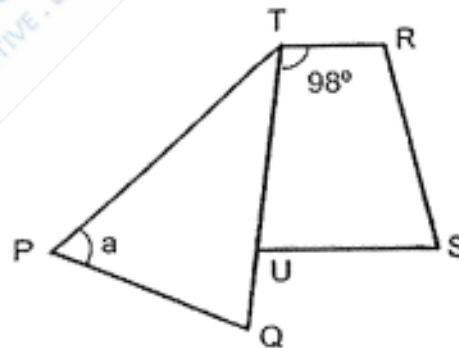
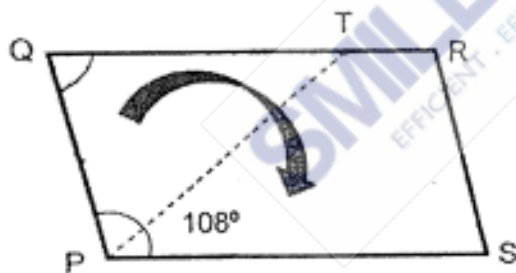
27. Chelsea was paid \$2 for every watch she sold and an additional \$5 for every 10 watches sold. How much would she receive for selling 70 watches?

Ans : \$ _____

28. There are 6 shaded squares in the figure. Shade 3 more squares to form a symmetric figure with XY as the line of symmetry.



29. Jimin has a piece of paper shown below as parallelogram PQRS. He folded the paper along the line PT as shown below. $\angle QPS = 108^\circ$ and $\angle RTQ = 98^\circ$.



Find $\angle a$.

Ans: _____°

30. Aziz had an equal number of blue and yellow clips at first. He gave away $\frac{1}{3}$ of his blue clips and some of his yellow clips. He then had $\frac{5}{12}$ of his clips left. What fraction of the yellow clips did Aziz give away?

Ans : _____

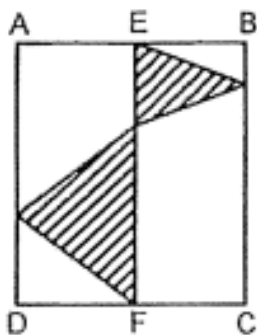
End of Booklet B

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1. Eddie, Freddy and Gary had 243 game tokens altogether. After Eddie gave $\frac{3}{10}$ of his tokens to Freddy and $\frac{1}{4}$ of his tokens to Gary, all three boys had the same number of tokens. How many tokens did Freddy and Gary have together at first?

Ans : _____

2. In the figure below, ABCD is a rectangle. EF is a straight line. $AE = EB$, $DF = FC$ and the area of the shaded part is 58 cm^2 . Find the area of rectangle ABCD.



Ans : _____ cm^2

3. The table below shows the number of watches sold at shop from Monday to Saturday. A total of 1300 watches were sold from Monday to Saturday.

Day	Mon	Tue	Wed	Thu	Fri	Sat
Number of watches sold	300	250	200	240	190	?

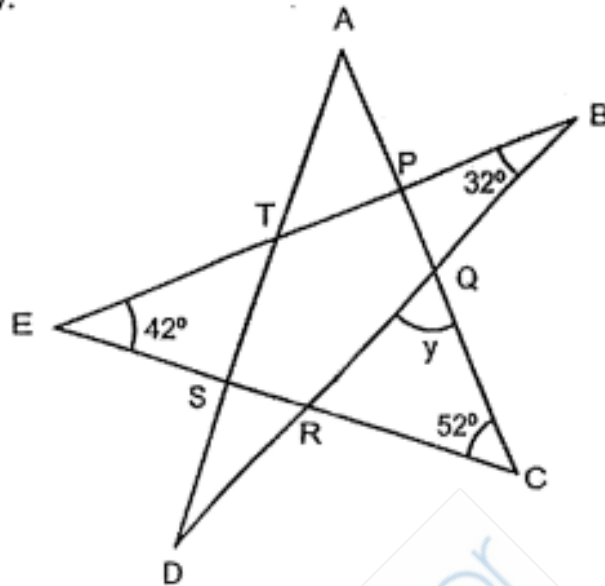
- (a) How many watches were sold on Saturday?

Ans : (a) _____

- (b) In which 2-day interval was there a 20% **decrease** in the number of watches sold?

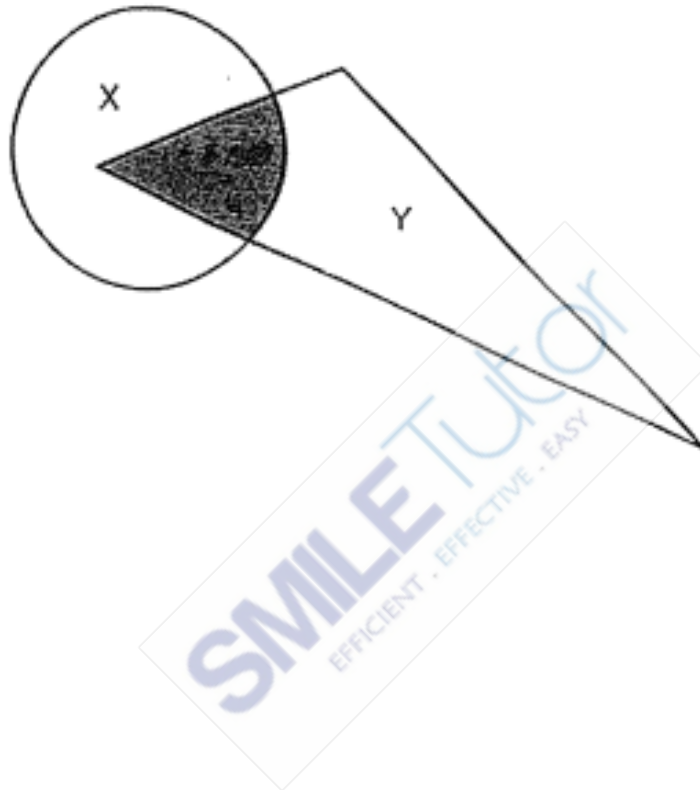
Ans: (b) From _____ to _____

4. The figure is formed by five straight lines AC, AD, BD, BE and CE. Find $\angle y$.



Ans : _____°

5. The figure below shows Circle X and Triangle Y that overlap each other. The ratio of the shaded area to the area of Circle X is $1 : 5$. The ratio of the shaded area to the area of Triangle Y is $4 : 23$. What is the ratio of the shaded area to the total unshaded area in the figure? Give your answer in the simplest form.



Ans : _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. Sunita was given the task to make 200 friendship bands. She made 8 bands each day from Monday to Friday and 15 bands each day on Saturday and Sunday. Starting her task on a Thursday, on which day of the week did Sunita complete the task?



Ans : _____ [3]

7. The table shows the charges for booking of a tennis court at Kenhill Community Club.

Time	Charge	Entrance Fee
8 a.m. to 10 p.m.	\$2.50 per half hour	Free for Members. \$2 per guest.

Kane, who is a club member, booked a tennis court from 4.30 p.m. to 7 p.m. to play tennis with 3 guests. How much will Kane need to pay?



Ans : _____ [3]

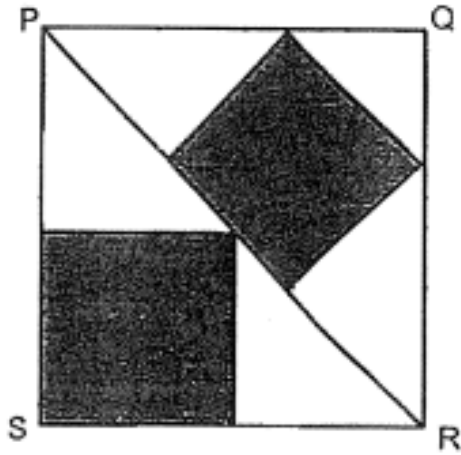
8. The pie chart shows the number of cakes baked by a baker.



The baker baked a total of 120 strawberry and mango cakes. The number of mango cakes is 42 fewer than the number of pandan cakes. How many chocolate cakes did he bake?

Ans : _____ [4]

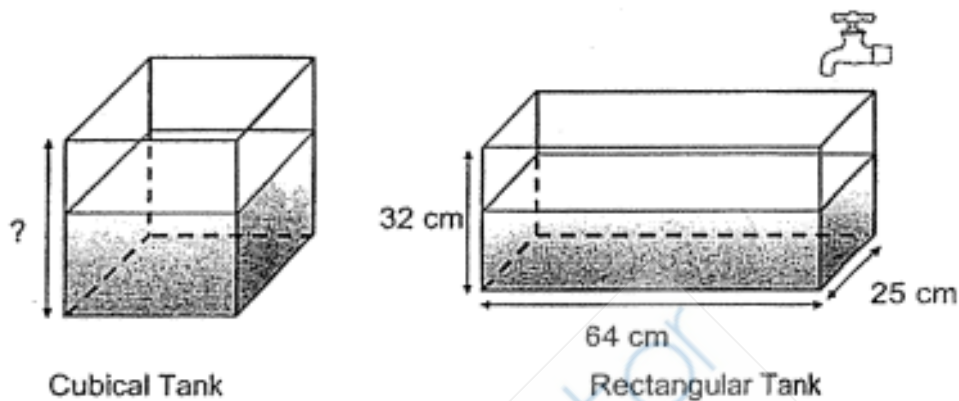
9. PQRS is a square with an area of 216 cm^2 . The shaded parts are made up of two different squares. Find the total area of the shaded parts.



Ans : _____ [3]

10. A cubical tank was $\frac{3}{5}$ filled with water. All its water was then transferred into a rectangular tank, 64 cm by 25 cm by 32 cm, filling 75% of it. Next, water from a tap was turned on to fill the rectangular tank to its brim at a rate of 1.6 litres per min.

(a) What was the height of the cubical tank?

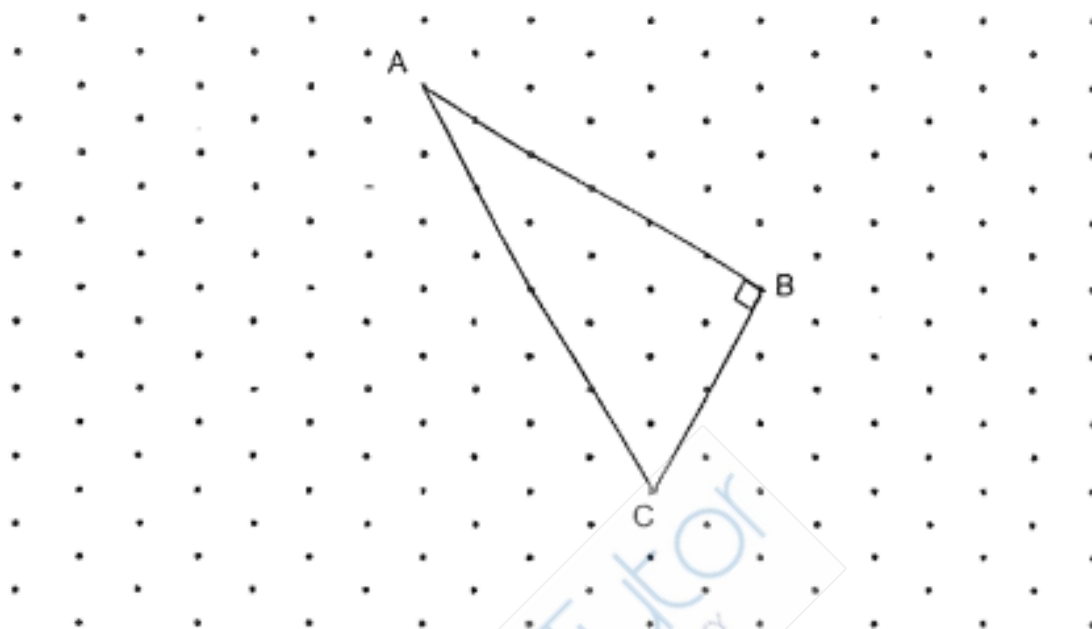


Ans : (a) _____ [3]

(b) How long did it take to fill the rectangular tank to its brim?

Ans : (b) _____ [1]

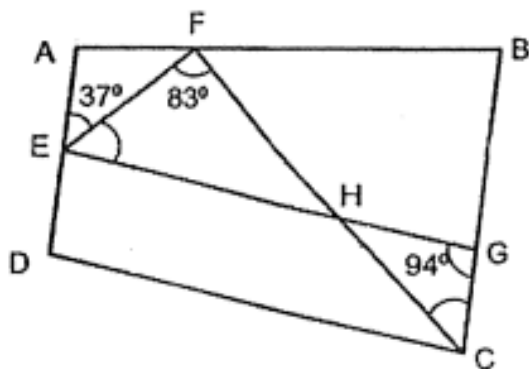
11. The figure below shows a right-angled triangle, ABC, drawn on a grid.



- (a) ACX is an equilateral triangle. Draw triangle ACX on the grid such that ACX does not overlap with triangle ABC. [1]
- (b) BCY is a right-angled triangle. Its area is $\frac{1}{2}$ the area of triangle ABC. Draw BCY on the grid such that it does not overlap with triangle ABC. [1]
- (c) Find the ratio of the area of triangle ACX to the area of triangle BCY.

Ans : (c) _____ [1]

12. In the figure below, ABCD is a trapezium. $AD \parallel BC$. The points E, F and G lie on the trapezium ABCD. FHC and EHG are straight lines. $\angle AEF = 37^\circ$, $\angle EFH = 83^\circ$ and $\angle HGC = 94^\circ$.



- (a) Find $\angle FEG$.

Ans : (a) _____ [2]

- (b) Find $\angle HCG$.

Ans : (b) _____ [2]

13. Gopal wanted to buy a pair of footwear. He saw a pair of running shoes on sale at 20% discount and a pair of sneakers at 25% discount. Both pairs of shoes had the same original price before the discount.

To buy the pair of running shoes, Gopal would need \$8.50 more than what he had. So, he bought the pair of sneakers instead. After that, he had \$3 left.

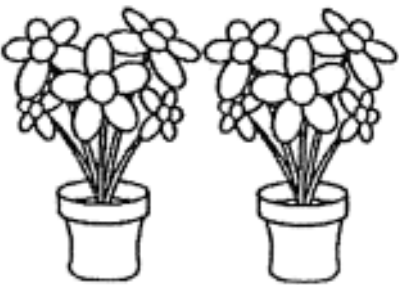

(a) What was the original price of the pair of running shoes?

Ans : (a) _____ [2]

(b) How much money did Gopal have at first?

Ans : (b) _____ [2]

14. Bin Jin bought pots of flowers at the prices shown below.

Large pots	Small pots
	
2 for \$25	3 for \$10

Bin Jin bought an equal number of large pots of flowers and small pots of flowers. She spent \$165 more on the large ones. What fraction of the total amount spent was on the small pots?

Ans : _____ [3]

15. Yusoff uses sticks to form figures that follow a pattern. The first four figures are shown below.



Figure 1

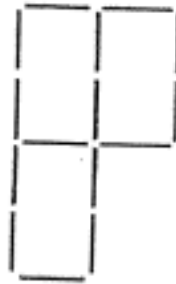


Figure 2



Figure 3



Figure 4

- (a) The table below shows the number of sticks used for each figure. Complete the table for Figure 5 and Figure 6.

[1]

Figure Number	Number of sticks used
1	10
2	15
3	18
4	23
5	
6	

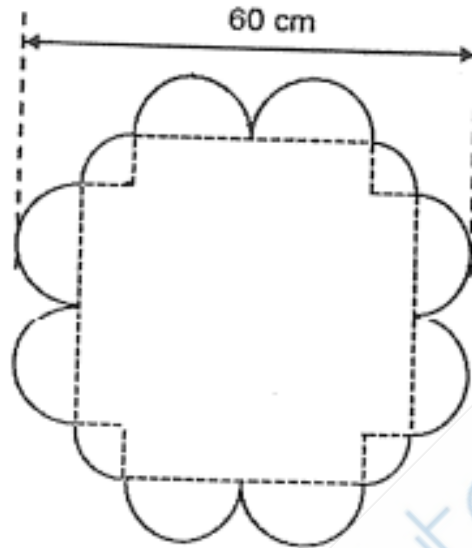
- (b) What is the difference in the number of sticks Yusoff will use for Figure 10 and Figure 12?

Ans : (b) _____ [1]

- (c) Following the pattern, Yusoff uses 151 sticks to form a figure.
What is the Figure Number?

Ans: (c) _____ [2]

16. The figure below shows a placemat. The outside edge of the placemat is formed by 8 identical semicircles and 4 identical quarter circles. The radius of each semicircle is 8 cm. The length of the whole placemat is 60 cm.



Find the area of the placemat. Take $\pi = 3.14$.

Ans : _____ [5]

17. Chef Ramsy used $\frac{1}{4}$ of a bag of flour to make some muffins and twice as many cupcakes. The amount of flour he used for each muffin was 3 times as much as each cupcake. Chef Ramsy used $\frac{5}{6}$ of the remaining bag of flour on a cake. He used 256.5 g more flour on the cake than the muffins.
- (a) What fraction of the bag of flour was used on the muffins?

Ans : (a) _____ [1]

- (b) How much flour was there in the bag at first?

Ans : (b) _____ [4]

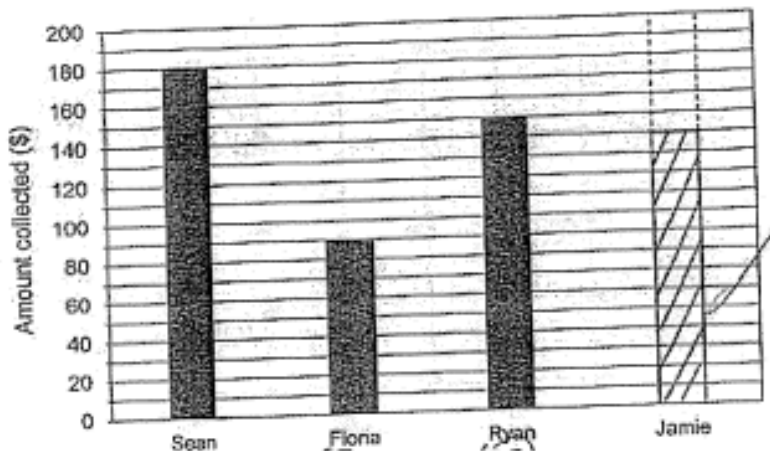
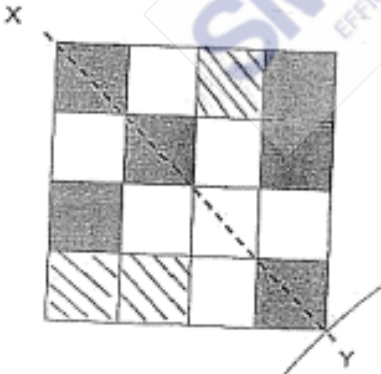
End of Paper 2

ANSWER SHEET

Paper 1 Booklet A Q1	2
Paper 1 Booklet A Q2	3
Paper 1 Booklet A Q3	4
Paper 1 Booklet A Q4	2
Paper 1 Booklet A Q5	2
Paper 1 Booklet A Q6	2
Paper 1 Booklet A Q7	4
Paper 1 Booklet A Q8	4
Paper 1 Booklet A Q9	1
Paper 1 Booklet A Q10	1
Paper 1 Booklet A Q11	4
Paper 1 Booklet A Q12	4
Paper 1 Booklet A Q13	2
Paper 1 Booklet A Q14	3
Paper 1 Booklet A Q15	3

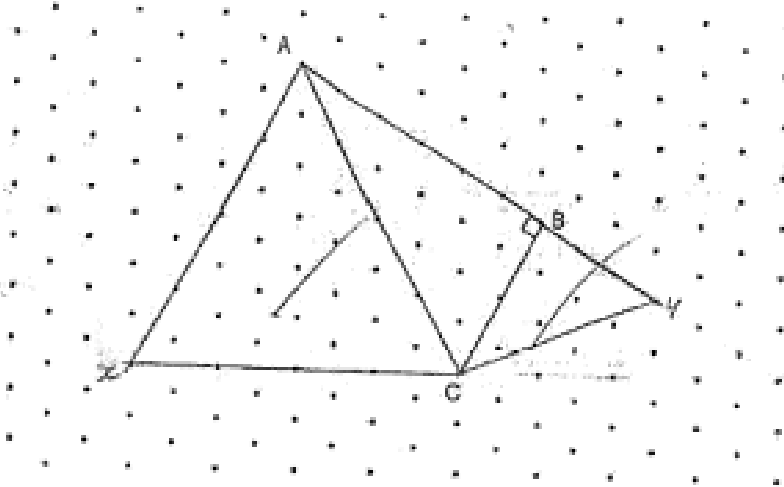
Paper 1 Booklet B Q16	12.27
Paper 1 Booklet B Q17	16
Paper 1 Booklet B Q18	12cm
Paper 1 Booklet B Q19	15cm ³
Paper 1 Booklet B Q20	\$0.40
Paper 1 Booklet B Q21	a) Day 3 b) 2 : 3
Paper 1 Booklet B Q22	87cm



Q23)	 <table border="1"> <caption>Data for Q23 Bar Chart</caption> <thead> <tr> <th>Name</th> <th>Amount collected (\$)</th> </tr> </thead> <tbody> <tr> <td>Sean</td> <td>180</td> </tr> <tr> <td>Fiona</td> <td>90</td> </tr> <tr> <td>Ryan</td> <td>150</td> </tr> <tr> <td>Jamie</td> <td>150</td> </tr> </tbody> </table>	Name	Amount collected (\$)	Sean	180	Fiona	90	Ryan	150	Jamie	150
Name	Amount collected (\$)										
Sean	180										
Fiona	90										
Ryan	150										
Jamie	150										
Q24)	219										
Q25)	a) South – East b) V										
Q26)	40%										
Q27)	\$175										
Q28)											
Q29)	67°										
Q30)	$\frac{5}{6}$										

PAPER 2

Q1)	63
Q2)	$58 \times 2 = 116$ $116 \times 2 = 232 \text{ cm}^2$
Q3)	a) $1300 - 300 - 250 - 200 - 240 - 190$ $= 1000 - 250 - 200 - 240 - 190$ $= 750 - 200 - 240 - 190$ $= 550 - 240 - 190$ $= 120$ b) Tue to Wed
Q4)	$\angle y = 180^\circ - 74^\circ - 52^\circ = 54^\circ$
Q5)	4 : 35
Q6)	Tuesday
Q7)	$5 \times 2.5 = 12.5$ $12.5 + 6 = \$18.50$
Q8)	Mango $\rightarrow (120 - 42) \div 2 = 39$ S $\rightarrow 39 + 42 = 81$ $81 \times 2 = 162$ $162 \rightarrow C + M$ C $\rightarrow 162 - 39 = 123$
Q9)	102 cm ²
Q10)	a) 40 cm b) 8 min

Q11)	 <p>c) 4 : 1</p>
Q12)	a) 57° b) 46°
Q13)	a) \$230 b) \$175.50
Q14)	$\frac{4}{19}$
Q15)	a) 26 , 31 b) 8 c) 36
Q16)	2708.88 cm ²
Q17)	a) $\frac{3}{20}$ b) 540 g

CATHOLIC HIGH SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

All diagrams are not drawn to scale.

(20 marks)

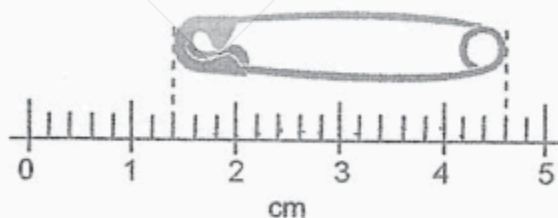
1. Which of the following is four hundred thousand and two in numerals?

- (1) 402
- (2) 4002
- (3) 40 002
- (4) 400 002

2. What is the value of $4 \div 800$?

- (1) 0.005
- (2) 0.02
- (3) 50
- (4) 200

3. What is the length of the safety pin as shown in the figure?



- (1) 3.1 cm
- (2) 3.2 cm
- (3) 4.3 cm
- (4) 4.6 cm

4. Which one of the following is likely to be the mass of a scientific calculator?



- (1) 9 g
- (2) 90 g
- (3) 900 g
- (4) 9000 g

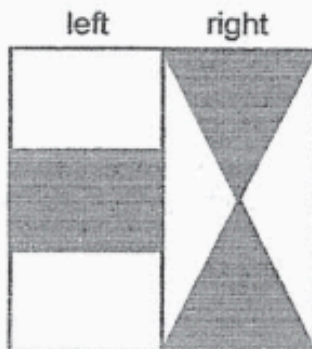
-
5. Find the value of $\frac{14m}{3} + 1$ when $m = 6$.

- (1) $5\frac{2}{3}$
- (2) 28
- (3) $28\frac{1}{3}$
- (4) 29

-
6. Which of the following is the same as 70 l 90 ml?

- (1) 7 090 ml
 - (2) 7 900 ml
 - (3) 70 090 ml
 - (4) 70 900 ml
-

7. A square is first divided into two equal halves. The left half is divided into 3 equal parts while the right half is divided into 4 equal parts. What fraction of the square is shaded?



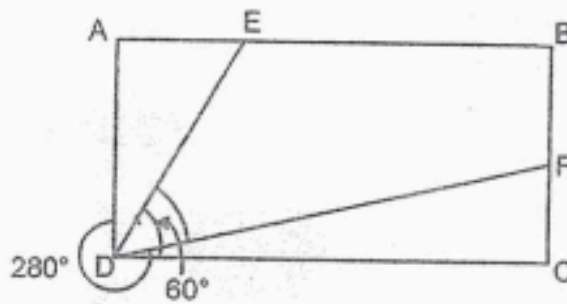
- (1) $\frac{5}{12}$
 (2) $\frac{5}{11}$
 (3) $\frac{3}{7}$
 (4) $\frac{3}{4}$

8. Shamsul was North-East of Teddy. At first, they were facing each other. Then both boys made the smallest turn to face North. Which of the following represents the turn made by each boy?



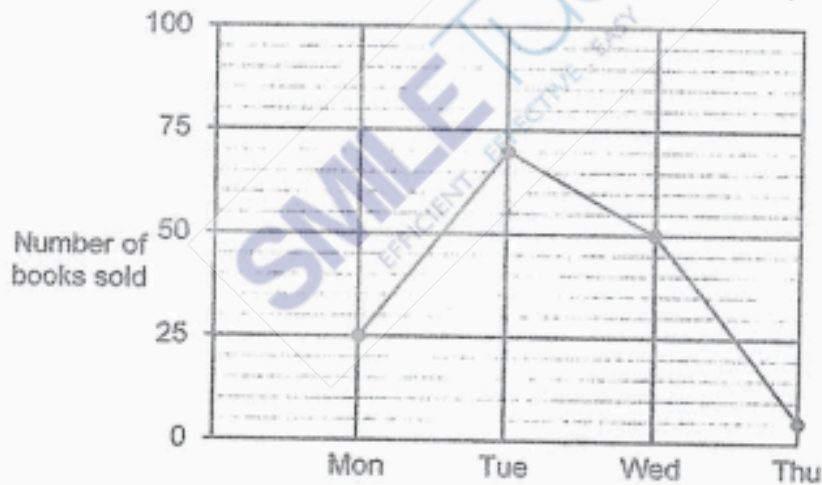
- | | <u>Shamsul</u> | <u>Teddy</u> |
|-----|---------------------|---------------------|
| (1) | 135° anti-clockwise | 45° clockwise |
| (2) | 135° clockwise | 45° anti-clockwise |
| (3) | 45° anti-clockwise | 135° clockwise |
| (4) | 45° clockwise | 135° anti-clockwise |

9. ABCD is a rectangle. E and F are points on the rectangle. $\angle ADF = 280^\circ$ and $\angle EDC = 60^\circ$. Find $\angle EDF$.



- (1) 20°
- (2) 30°
- (3) 45°
- (4) 50°

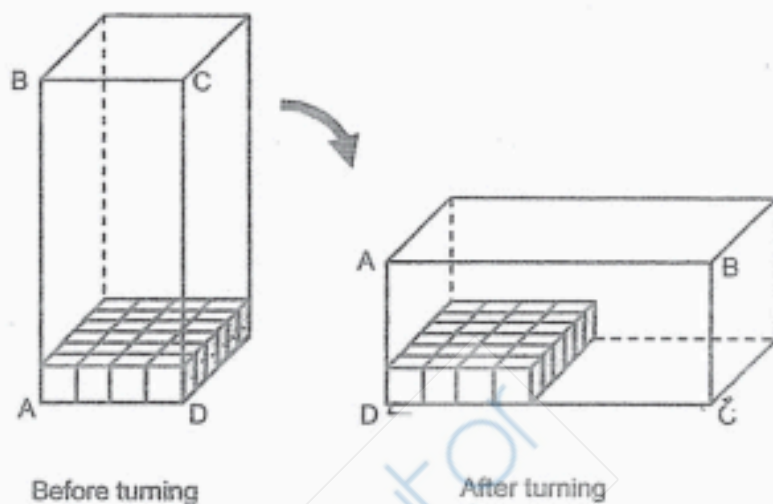
10. The line graph shows the number of books sold from Monday to Thursday.



Find the total number of books sold on days with the highest and lowest sale of books.

- (1) 75
- (2) 55
- (3) 120
- (4) 125

11. At first, Kairu covered the base of a rectangular box completely with a layer of unit cubes. He then turned the box to rest on the ground. The unit cubes, when re-arranged, covered 50% of its base. How many cubes can fill the box completely without any gap?



- (1) 144
 (2) 168
 (3) 192
 (4) 384

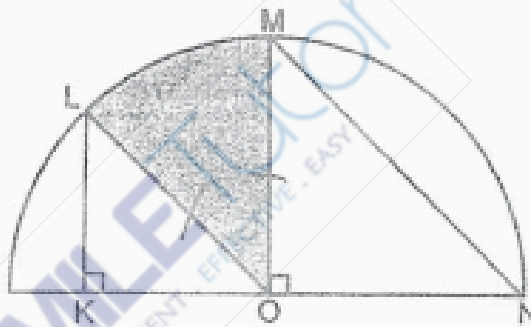
12. Which one of the following fractions is the furthest from $\frac{1}{2}$?

- (1) $\frac{1}{8}$
 (2) $\frac{1}{7}$
 (3) $\frac{1}{6}$
 (4) $\frac{1}{5}$

13. Zephyr bought 4 times as many chocolates as sweets. For every 5 chocolates packed into a party bag, he packed 3 sweets. He had 35 chocolates left when all the sweets were completely packed. How many chocolates did he buy at first?

- (1) 15
- (2) 20
- (3) 25
- (4) 60

14. The figure is formed by a semicircle with centre O and 4 straight lines KL , OL , OM and NM . K , L , M and N lie on either the arc or the diameter of the semicircle.



Which of the following statement(s) is/are true?

Statement A : Line NM is equal to the radius of the semicircle.

Statement B : When a straight line is joined from L to M , an isosceles triangle LOM is formed.

Statement C : The area of the shaded part LOM is greater than the area of unshaded part KLO .

- (1) A only
- (2) C only
- (3) A and B only
- (4) B and C only

15. James bought a packet of flour to make cakes. He used an equal amount of flour for each cake. After he had used the flour to make 3 cakes, $\frac{3}{4}$ of the packet of flour was left. He went on to bake another 5 cakes and had 1400 g of the flour left. How much flour was used for each cake?
- (1) 350 g
 - (2) 700 g
 - (3) 2800 g
 - (4) 4200 g

END OF BOOKLET A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (5 marks)

16. Round 29 947 to the nearest hundred.

Ans: _____

17. Find the value of $6 + \frac{3}{5}$

Ans: _____

18. Measure and write down the size of $\angle m$ in the figure.

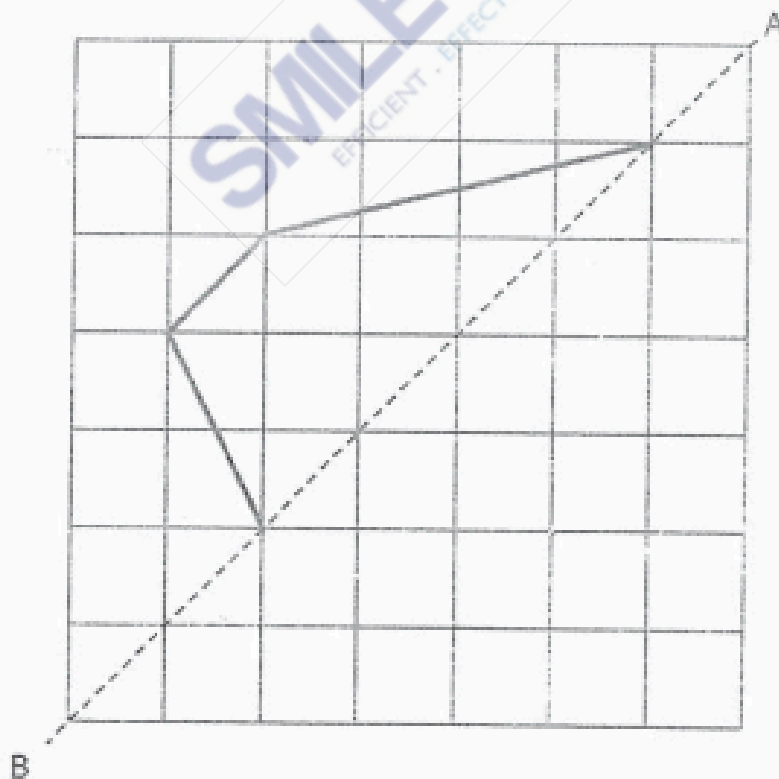


Ans: _____

19. Find the value of $2 - \frac{1}{4} - \frac{1}{3}$.
 Leave your answer as a mixed number.

Ans: _____

20. The figure shows half of a symmetric figure. Draw lines to complete the symmetric figure with the dotted line AB as the line of symmetry.



Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale.

(20 marks)

21. Jai and Kyle entered a gym at 6.30 p.m. Jai left 2 h 30 min later. Kyle left 20 min earlier than Jai. At what time did Kyle leave the gym?
Give your answer in 24-hour clock format.

Ans: _____

22. Molly is 1.74 m tall. She is 7 cm taller than her brother. What is her brother's height in metres?

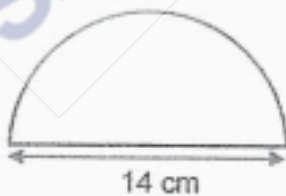
Ans: _____ m

23. What is the price of the tennis racket after discount?



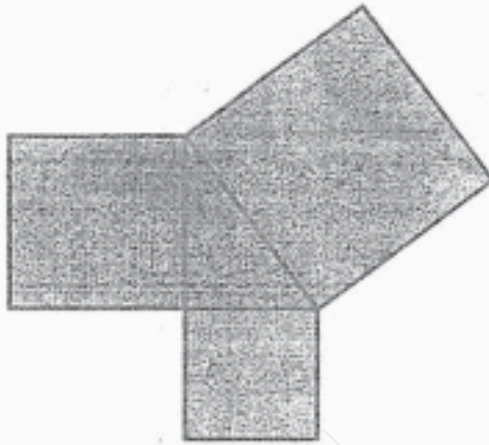
Ans: \$ _____

24. The figure below shows a semicircle of diameter 14 cm.
 What is the area of the figure? Take $\pi = \frac{22}{7}$



Ans: _____ cm²

25. The shaded figure below is formed using 3 different squares and a triangle. The perimeter of the triangle is 24 cm. What is the perimeter of the shaded figure?



Ans: _____ cm

26. 9 pupils took turns to play 6 Rubik's cubes during a 30-min recess. At any one time, 6 pupils played the cubes while the other 3 waited. Each had the same amount of playing time. How many minutes did each pupil play on the Rubik's cube?



Rubik's cube

Ans: _____ min

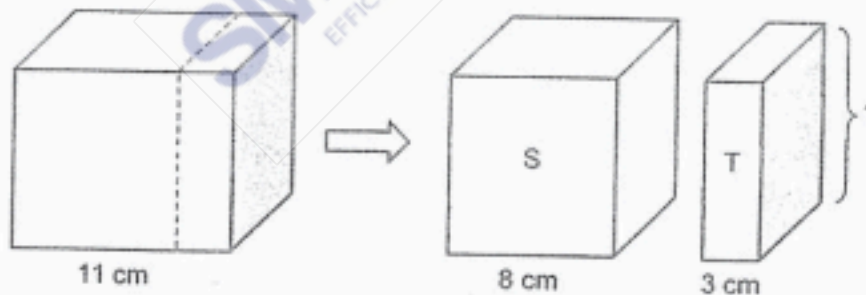
27. Lily bought some stickers based on the charges shown below.

First 10 stickers	\$7
Every additional sticker	50¢
Get 2 additional stickers free for every purchase of 30 stickers	

She paid \$17 for the stickers. How many stickers did she get in all?

Ans: _____

28. A cuboid was cut along the dotted line into two smaller cuboids as shown below. The shaded face is a square and the volume of cuboid S is 500 cm^3 more than that of cuboid T. What is the height of cuboid T?



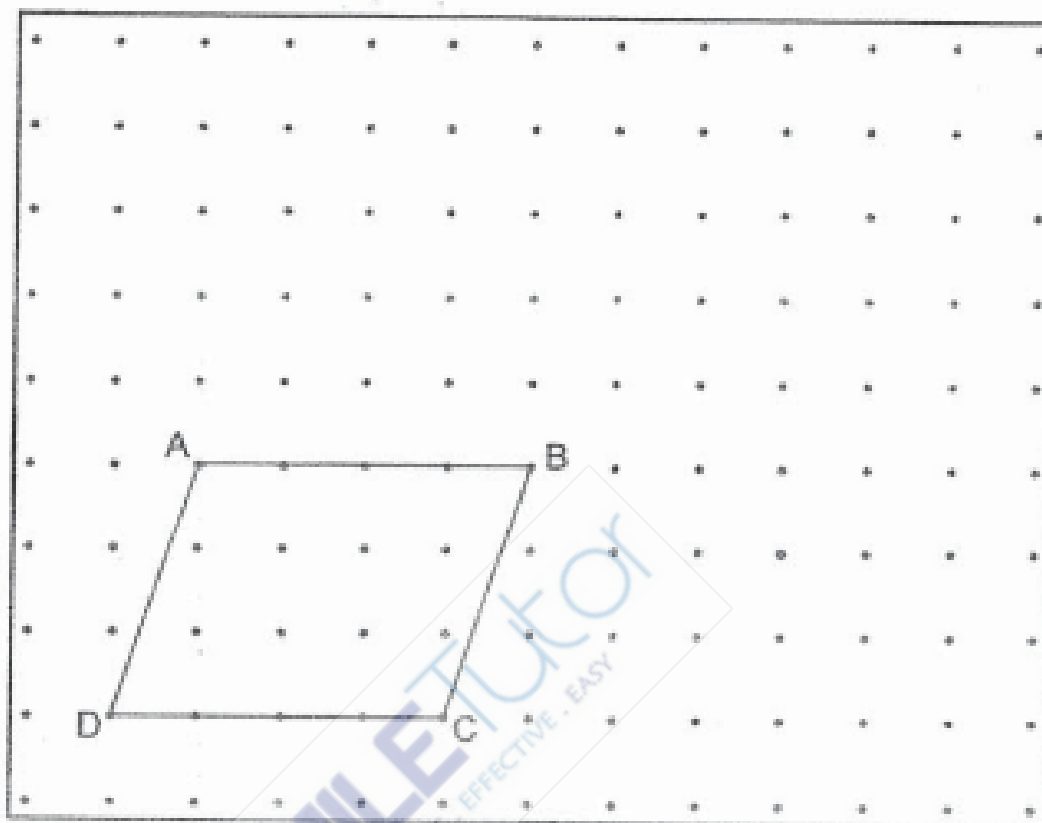
Ans : _____ cm

29. Mrs Lee wanted to buy 9 boxes of mooncakes but she was short of \$28. She bought 7 boxes of mooncakes and had \$22 left. How much money did she have at first?



Ans: \$ _____

30. A parallelogram ABCD is drawn on a square grid inside a box.



By joining the dots on the grid with straight lines,

- draw a triangle ACE such that AE is parallel to CB and it has the same area as triangle ABC.
- draw a triangle BCF such that $\angle CBF$ is a right angle and $BC = BF$. Triangle BCF must not overlap with the parallelogram ABCD.

Total marks for questions 21 to 30
END OF BOOKLET B
END OF PAPER 1

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (10 marks)

1. Charlie needs 100 pieces of string, each of length 80 cm. The string is sold in rolls of 500 cm each. What is the least number of rolls of string that Charlie needs to buy?

Ans: _____

2. The table shows the number of sit-ups Ramesh did last week.

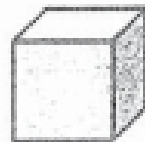
Day	Number of sit-ups
Monday to Friday	$3p$ per day
Saturday	60
Sunday	$4p - 8$

What was the total number of sit-ups Ramesh did last week?
 Give your answer in terms of p in the simplest form.

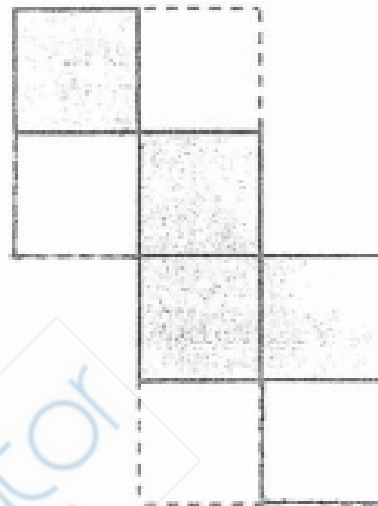
Ans: _____

3. The nets drawn for the solids below are incomplete and missing two faces. For each net, shade two faces so that the net can be folded to form the respective solids.

(a)



Cube

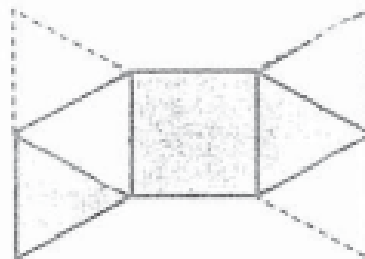


[1]

(b)



Pyramid



[1]

4. A roll of ribbon can be cut equally into 9 short ribbons or 5 long ribbons. A short ribbon is 24 cm shorter than a long ribbon. What is the length of a short ribbon?

Ans: _____ cm

- 5 Ben and Kai cycled in three races in a tournament. Their cycling times for the races are shown in the table below.

Race	Cycling Time (min)	
	Ben	Kai
1 st	23	21
2 nd	22	29
3 rd	24	16

Both calculated their average cycling time for the three races. Who had a faster average cycling time? What was his average cycling time?

Ans: Name : _____

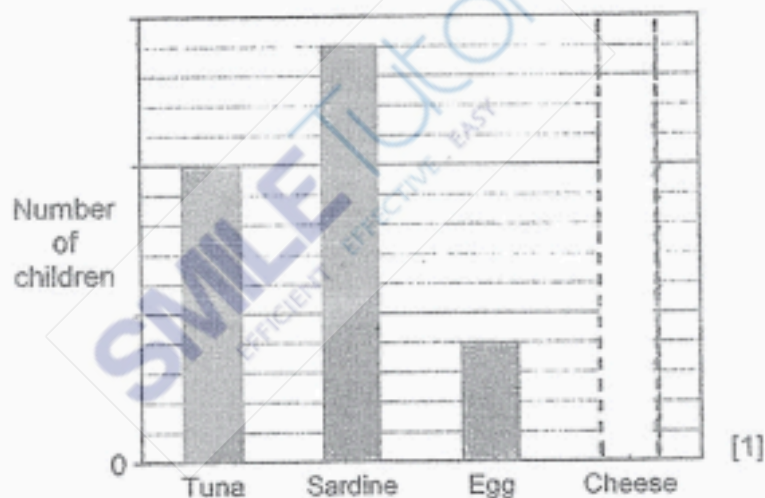
Average cycling time: _____ min

For questions 6 to 17, show your working clearly in the space provided for each question and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. A group of children was asked to choose one sandwich from Tuna, Sardine, Egg and Cheese. The pie chart represents the children's choices.



The children's choices are also represented by the bar graph below but the number of children is not shown on the scale. The bar that shows the number of children who chose Cheese is also not drawn.

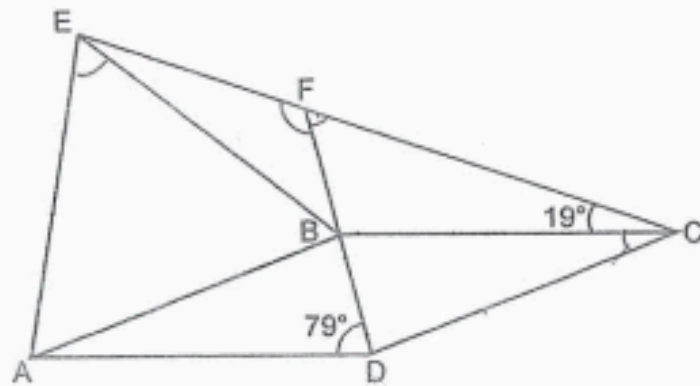


- (a) How many children chose Cheese?
 Draw the bar that represents the number of children who chose Cheese in the bar graph above.
- (b) The number of children who chose Sardine was 56.
 How many children chose Egg?

Ans: (a) _____ [1]

(b) _____ [1]

7. In the figure, ABCD is a rhombus and AEB is an equilateral triangle. FBD and EFC are straight lines. $\angle BDA = 79^\circ$ and $\angle FCB = 19^\circ$. Find $\angle EFD$.



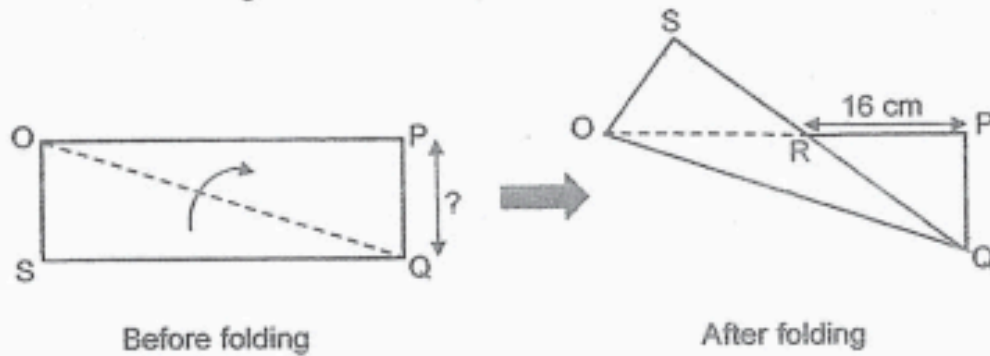
Ans: _____ [3]

8. At a bread shop, a customer could buy one additional bun at half its usual price for every 3 buns bought. Petra paid \$16.80 for 12 buns. What was the usual price of one bun?

SMILE Tutor
EFFICIENT · EFFECTIVE · EASY

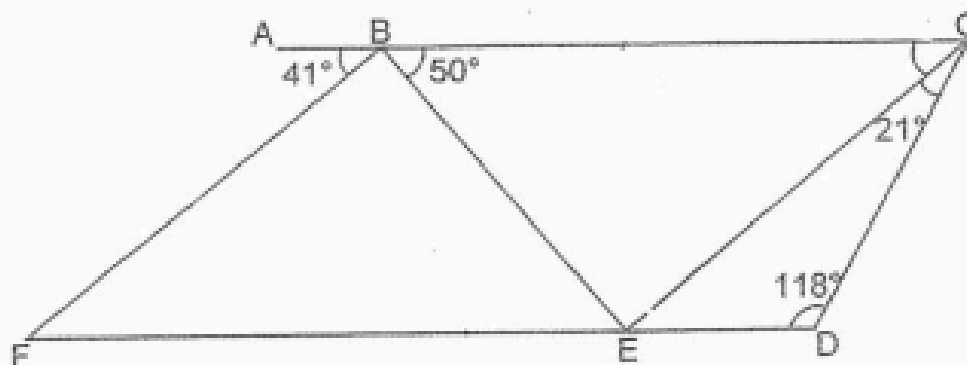
Ans: _____ [3]

9. A rectangular paper $OPQS$ of area 432 cm^2 is folded along the dotted line OQ to form the figure $OSRPQ$ of area 312 cm^2 . $RP = 16 \text{ cm}$. What is the length of PQ ?



Ans: _____ [3]

10. In the figure below, BEF is a triangle and BCDE is a trapezium. ABC is a straight line.



- (a) Find $\angle BCE$.

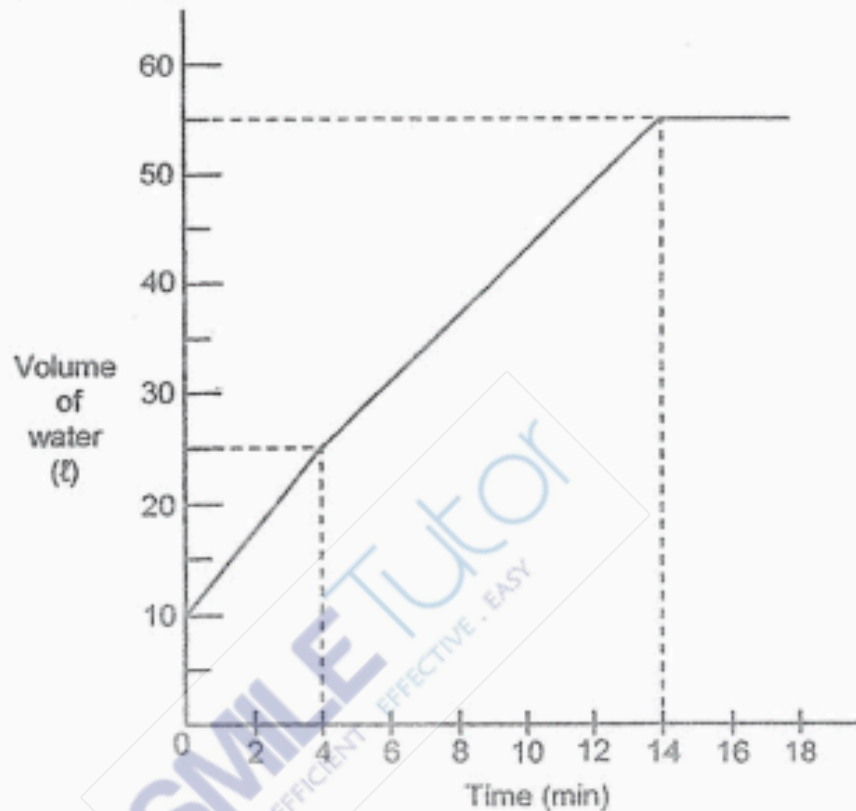
Ans: (a) _____ [1]

- (b) The figure above is not drawn to scale. Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (\checkmark) to indicate your answer.

Statement	True	False	Not possible to tell
BCEF is a parallelogram.			
BE is perpendicular to EC.			

[2]

11. At first, a tank was filled with some water. Tap A was turned on for more water to flow into the tank. After 4 minutes, Tap B was turned on for water to flow out of the tank. Both taps were turned off at the same time when the tank was completely filled without overflowing. The graph below shows the amount of water in the tank over the 18 minutes.



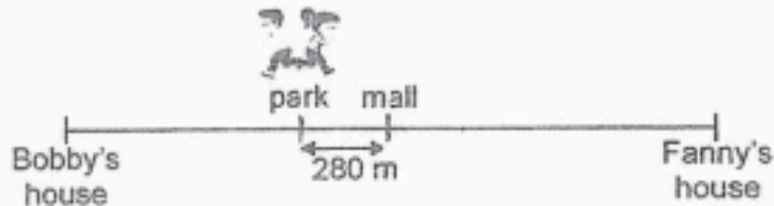
- (a) What fraction of the tank was filled with water at first before Tap A was turned on? Give your answer in the simplest form.
- (b) How many litres of water flowed into the tank per minute before Tap B was turned on?
- (c) From the 4th minute to the 14th minute, how much water flowed out of the tank?

Ans: (a) _____ [1]

(b) _____ [1]

(c) _____ [2]

12. Bobby and Fanny started jogging from a park to their houses at the same time. A mall was exactly halfway between their houses. It was also 280 m away from the park as shown below. Bobby jogged at 120 m/min while Fanny jogged at 40 m/min faster than Bobby. Both did not change their speeds throughout and reached their houses at the same time. How far was Bobby's house from the park?



Ans: _____ [4]

13. A fruit seller bought some plums. He threw away 152 plums that were damaged. After selling $\frac{1}{5}$ of the remaining plums, he was left with $\frac{4}{7}$ of the plums bought. He packed these into large boxes of 12 plums and small boxes of 8 plums. All the boxes were full and there was no left over.
- (a) How many plums were packed into boxes?
- (b) What was the least number of boxes used by the fruit seller?

Ans: (a) _____ [2]

(b) _____ [2]

14. A funfair was decorated with red and white balloons. At first, there were 19 more white balloons than red balloons. 25% of the white balloons burst. More red balloons were added so that there were 26 more red balloons than white balloons. In the end, there was a total of 170 red and white balloons.

- (a) How many red balloons were there in the end?
- (b) What was the percentage increase in the number of red balloons? Round your answer to 1 decimal place.



Ans: (a) _____ [1]

(b) _____ [3]



15. A metal box filled completely with 30 identical bolts weighs 1.18 kg. The same metal box when filled completely with 70 identical nuts weighs 1.54 kg. The ratio of the mass of a bolt to that of a nut is 5 : 3.



a bolt



a nut

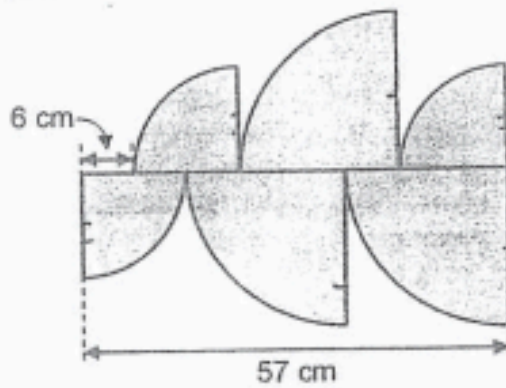
- (a) How many nuts have the same total mass of 3 bolts?
(b) What is the mass of the metal box?

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Ans: (a) _____ [1]

(b) _____ [3]

16. The figure is formed by 3 identical small quarter circles and 3 identical big quarter circles.



- (a) Find the ~~diameter~~ ^{radius} of the small circle.
- (b) Find the perimeter of the shaded figure.

(Take $\pi = 3.14$)

Ans: (a) _____ [2]

(b) _____ [3]

17. Raju used white and grey squares to form the following patterns as shown below.



Figure 1



Figure 2



Figure 3

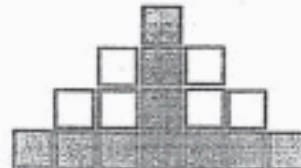


Figure 4

The table below shows the number of white and grey squares in each figure.

Figure Number	1	2	3	4	5
Number of white squares	0	0	2	6	
Number of grey squares	1	4	7	10	

[1]

- (a) Fill in the table for Figure 5.
- (b) What is the total number of squares in Figure 40?
- (c) How many more white squares than grey squares are used in Figure 40?

Ans: (b) _____ [1]

(c) _____ [3]

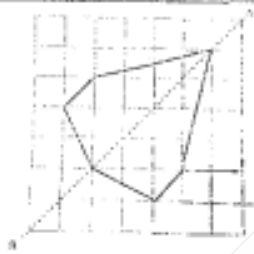
END OF PAPER 2

ANSWER SHEET

BOOKLET A (PAPER 1)


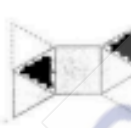
Q1	4	Q2	1	Q3	2	Q4	2	Q5	4
Q6	3	Q7	1	Q8	2	Q9	4	Q10	1
Q11	3	Q12	1	Q13	4	Q14	4	Q15	4

BOOKLET B (PAPER 1)

Q16	29900	Q17	10
Q18	94°	Q19	$2\frac{3}{12} - \frac{4}{12} = 1\frac{12}{12} - \frac{3}{12} - \frac{4}{12} = 1\frac{9}{12} = 1\frac{3}{4}$
Q20		Q21	2040
Q22	$174 - 7 = 167$ ANS : 1.67m	Q23	$\frac{89}{100} \times 90 = 8.9 \times 9 = 80.1$ ANS : \$80.10
Q24	$\frac{1}{2} \times \frac{22}{7} \times 7 \times 7 = 77$ ANS : 77cm^2	Q25	$24 \times 3 = 72\text{cm}$
Q26	$6 \times 30 = 180 \text{ min}$ $180 \div 9 = 20 \text{ min}$	Q27	$17 - 7 = 10$ $10 \div 0.5 = 20$ $20 \div 10 + 2 = 32$
Q28	$8 - 3 = 5$ $500 \div 5 = 100$ $\sqrt{100} = 10$ ANS : 10cm	Q29	$22 + 28 = 50$ $9 - 7 = 2$ $2b = \$50$ $7b = \frac{50}{2} \times 7$ $= 25 \times 7 = 175$ $175 \div 22 = 197$ ANS : \$197



PAPER 2

Q1	No of string from 1 roll $= 500 \div 30 = 16R20$ $100 \div 6 = 16R4 \approx 17$ Ans: 17	Q2	$3p \times 5 + 60 + 4p - 16$ $= 15p + 4p + 60 - 16$ $= 19p + 44$
Q3	a)  b) 	Q4	$24 \times 5 = 120$ $9 - 5 = 4$ $120 / 4 = 30$ Ans: 30 cm
Q5	$\begin{array}{r} B \\ 23+22+24 \\ \hline 3 \end{array} : \begin{array}{r} K \\ 21+29+16 \\ \hline 3 \end{array}$ $69/3 : 66/3$ $23 : 22$ Ans: Name: Kai Average cycling time: 22 min	Q6	a) $10 \times 4 - 14 - 4 - 10$ $= 40u - 18u - 10u$ $= 12u$ b) $56 / 14 \times 4 = 16$
Q7	$\angle EFD = 180^\circ - 60^\circ = 120^\circ$	Q8	1 set = 4 buns = 7u $12 / 4 = 3$ $3 \times 7u = 21u$ $16.8 / 21 = 0.8$ $0.8 \times 2 = 1.6$ Ans: \$1.60

Q9	$\Delta OSQ = 432 \div 2 = 216$ $\Delta RPQ = 312 - 216 = 96$ $\frac{1}{2} \times 16 \times H = 96$ $\frac{96 \times 2}{16} = 12$ ANS : 12cm	Q10	a) $\angle BCE = 180^\circ - 21^\circ - 118^\circ = 41^\circ$ b) <table border="1"> <thead> <tr> <th>Statement</th><th>True</th><th>False</th><th>Not possible to tell</th></tr> </thead> <tbody> <tr> <td>BCEF is a parallelogram</td><td></td><td></td><td>✓</td></tr> <tr> <td>BE is perpendicular to EC</td><td></td><td>✓</td><td></td></tr> </tbody> </table>	Statement	True	False	Not possible to tell	BCEF is a parallelogram			✓	BE is perpendicular to EC		✓	
Statement	True	False	Not possible to tell												
BCEF is a parallelogram			✓												
BE is perpendicular to EC		✓													
Q11	a) $\frac{10}{55} = \frac{2}{11}$ b) 4 min \rightarrow 15 litre $15 \text{ litre} / 4 = 4 \frac{3}{4} \text{ litre/min}$ c) $14 - 4 = 10$ $10 \times 3 \frac{3}{4} = 37 \frac{1}{2} \text{ litre}$ $37 \frac{1}{2} - 30 = 7 \frac{1}{2} \text{ litre}$	Q12	$280 \times 2 = 560 \text{ (Fanny)}$ $560 \div 40 = 14$ $120 \times 14 = 1680 \text{m}$												
Q13	a) $152 / 2 \times 4 = 304$ b) $304 / 12 = 25 \text{ R } 4$ 24 large box + 16 plums $24 + 2 = 26$	Q14	a) $75\%w + 75\%w + 26 = 170$ $150\%w = 144$ $75\%w = 144/150 \times 75 = 72$ $72 + 26 = 98$ b) In the end, $w = 72$ $75\%w = 72$ $1\%w = 72/75$ $100\%w = 72/75 \times 100 = 96$ $96 - 19 = 77$ $98 - 77 = 21$ $21/77 \times 100\% \Rightarrow 27.3\%$												
Q15	a) $3 \times 5 = 15$ $15 \div 3 = 5$ b) $0.36 / 12 \times 30 = 0.9$ $1.18 - 0.9 = 0.28 \text{ kg}$	Q16	a) $6 \times 2 = 12$ $57 - 12 = 45$ $45 \div 3 = 15$ ANS : 15cm b) $1/4 \times 3 \times 3.14 \times 30 + 1/4 \times 3 \times 3.14 \times 42 = 169.56$ $169.56 + 45 + 63 + 6 = 283.56 \text{cm}$ Ans: 283.56 cm												

Q17

a)

Figure number	1	2	3	4	5
Number of white square	0	0	2	6	12
Number of grey square	1	4	7	10	13

Ans : 12 (white square)
13 (Grey square)

b) $40 \times 40 = 1600$

c) $(\text{Fig no}-1) \times 3 + 1$
 $(40 - 1) \times 3 + 1$
 $39 \times 3 + 1$
 118 (Grey)
 $1600 - 118 = 1482 \text{ (white)}$
 $1482 - 118 = 1364$
 Ans: 1364

CATHOLIC HIGH SCHOOL SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet. All diagrams are not drawn to scale. (20 marks)

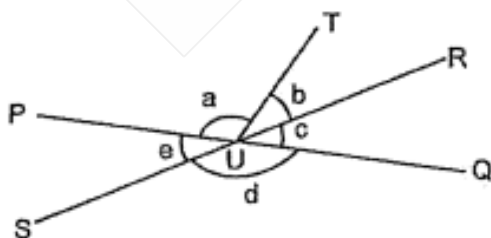
1. The number of visitors who at an amusement park was 30 000 when rounded to the nearest hundred. Which of the following was a possible number of visitors?

- (1) 29 949
- (2) 29 963
- (3) 30 053
- (4) 30 097

2. Express $6\frac{2}{5}$ as a decimal.

- (1) 6.04
- (2) 6.20
- (3) 6.25
- (4) 6.40

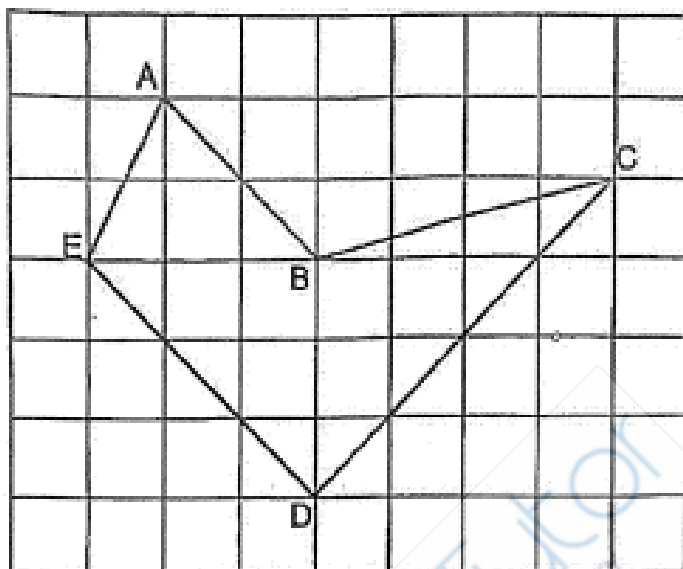
3. PUQ, SUR and TU are straight lines.



Which of the following statements is true?

- (1) $\angle a = \angle d$
- (2) $\angle b = \angle e$
- (3) $\angle a + \angle b = \angle d$
- (4) $\angle b + \angle c = \angle e$

4. Which two lines are parallel to each other?



- (1) AB and ED
- (2) BC and CD
- (3) AE and CD
- (4) ED and DC

-
5. Which of the following numbers is the smallest?

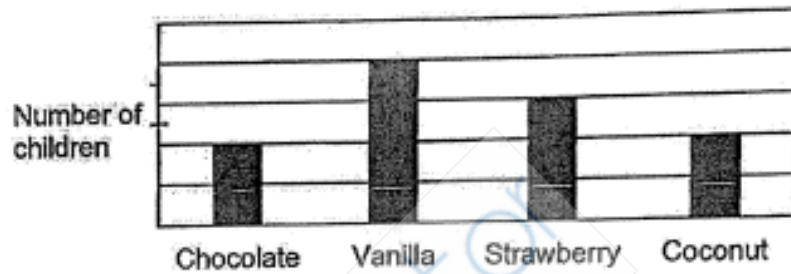
- (1) 0.780
 - (2) 0.087
 - (3) 0.708
 - (4) 0.807
-

6. A group of children was asked to choose an ice-cream flavour. The children's choices were represented in a table and a bar graph below.

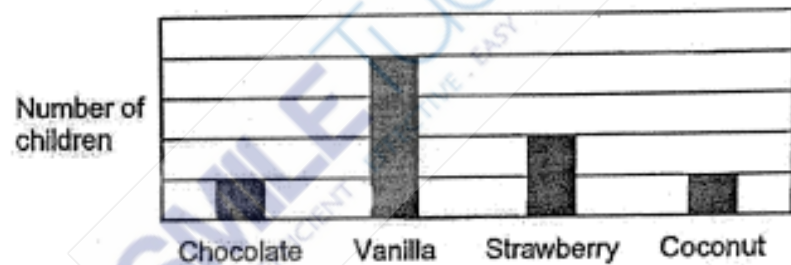
Ice-cream flavour	Chocolate	Vanilla	Strawberry	Coconut
Number of children	20	60	40	20

Which of the following bar graphs represents the children's choices as shown in the table above?

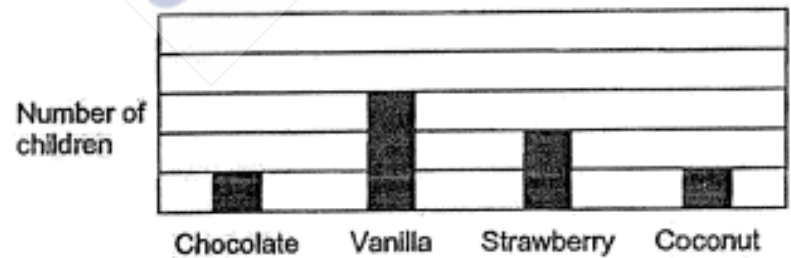
(1)



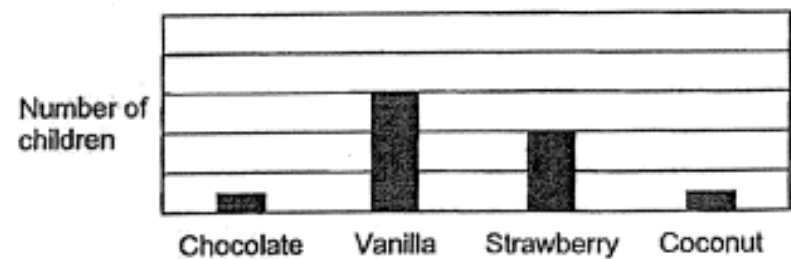
(2)



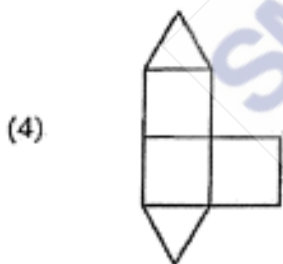
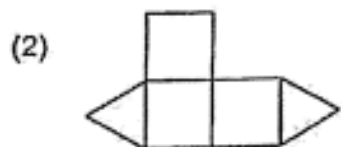
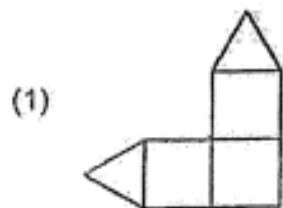
(3)



(4)



7. Each figure is made up of 3 identical squares and 2 identical triangles. Which of the following figures has a line of symmetry?



-
8. Express $8n - 1 - 5n + 6$ in the simplest form.

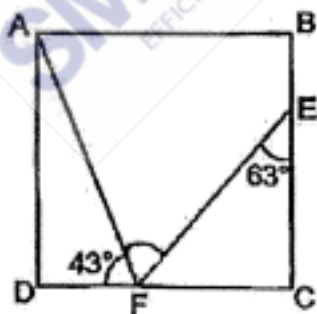
- (1) $3n - 7$
 (2) $3n + 5$
 (3) $13n - 7$
 (4) $13n + 5$
-

9. A restaurant opens every day for the time shown in the table below. For how long is the restaurant open each day?

Opening hours	
11.30 a.m. to 3.00 p.m.	
5.30 p.m. to 9.30 p.m.	

- (1) 6 h 30 min
- (2) 7 h 30 min
- (3) 8 h 30 min
- (4) 9 h 30 min

10. In the figure, ABCD is a square. $\angle FEC = 63^\circ$ and $\angle AFD = 43^\circ$. Find $\angle AFE$.



- (1) 70°
- (2) 74°
- (3) 106°
- (4) 110°

11. Arrange these masses from the lightest to the heaviest.

2.305 kg	$2\frac{3}{5}$ kg	2 kg 35 g
----------	-------------------	-----------

	<u>Lightest</u>		<u>Heaviest</u>
(1)	2 kg 35 g	2.305 kg	$2\frac{3}{5}$ kg
(2)	2.305 kg	2 kg 35 g	$2\frac{3}{5}$ kg
(3)	$2\frac{3}{5}$ kg	2.305 kg	2 kg 35 g
(4)	2.305 kg	$2\frac{3}{5}$ kg	2 kg 35 g

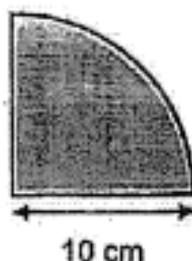
12. The price of a tennis racket was \$40. Sam bought one such tennis racket and had to pay 7% GST on the price. How much did he pay for the tennis racket?

- (1) \$2.80
 (2) \$37.20
 (3) \$42.80
 (4) \$47.00

13. The chairs in a hall were arranged in rows. Each row had the same number of chairs. Eric sat on one of the chairs. There were 3 chairs to his right and 8 chairs to his left. There were 4 rows of chairs in front of him and 9 rows of chairs behind him. How many chairs were there altogether in the hall?

- (1) 25
 (2) 60
 (3) 143
 (4) 168

14. The figure below shows a quarter circle of radius 10 cm. What is the area of the figure? Leave your answer in terms of π .



- (1) $5\pi \text{ cm}^2$
 (2) $25\pi \text{ cm}^2$
 (3) $(5\pi + 20) \text{ cm}^2$
 (4) $(100\pi + 20) \text{ cm}^2$
-
15. Richard had two bags containing the same number of marbles. There was a mixture of blue and red marbles in each bag. The ratio of the number of blue to red marbles was 2 : 7 in the first bag and 1 : 3 in the second bag. What fraction of the total number of marbles were blue marbles?

- (1) $\frac{3}{13}$
 (2) $\frac{17}{36}$
 (3) $\frac{17}{72}$
 (4) $\frac{55}{72}$

END OF BOOKLET A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (5 marks)

16. Express 10 043 cm in metres.

Ans: _____ m

17. Write down all the common factors of 12 and 16.

Ans: _____

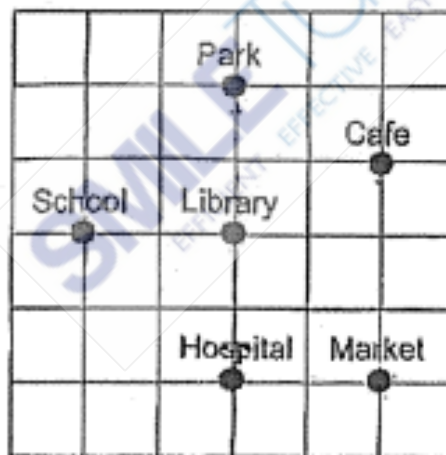
18. Henry spent \$8 on 16 apples. The cost of each apple was the same. How much did 1 such apple cost?

Ans: \$ _____

19. What is the value of $75 - (28 + 4 + 3) + 15$?

Ans: _____

20. In the square grid below, Janice was at one of the landmarks facing the market. When she turned 135° anti-clockwise, she faced the school. Which landmark was Janice at before she turned to face the school?



Ans: _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale.

(20 marks)

21. Express $\frac{6}{7}$ as a decimal.

Give your answer correct to 1 decimal place.

Ans: _____

22. June uses the recipe below to make some tarts.

Tart Recipe (makes 5 pieces)	
Flour:	250 g
Butter:	150 g
Sugar:	50 g

She has 750 g of flour, 350 g of butter and 130 g of sugar.
What is the greatest number of pieces of tarts she can make?

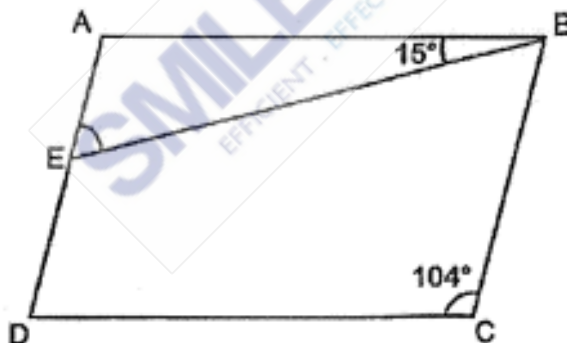
Ans: _____

23. Use all the digits 7, 0, 5, 8 to form
- (a) the smallest multiple of 5
- (b) the number closest to 8000

Ans: (a) _____

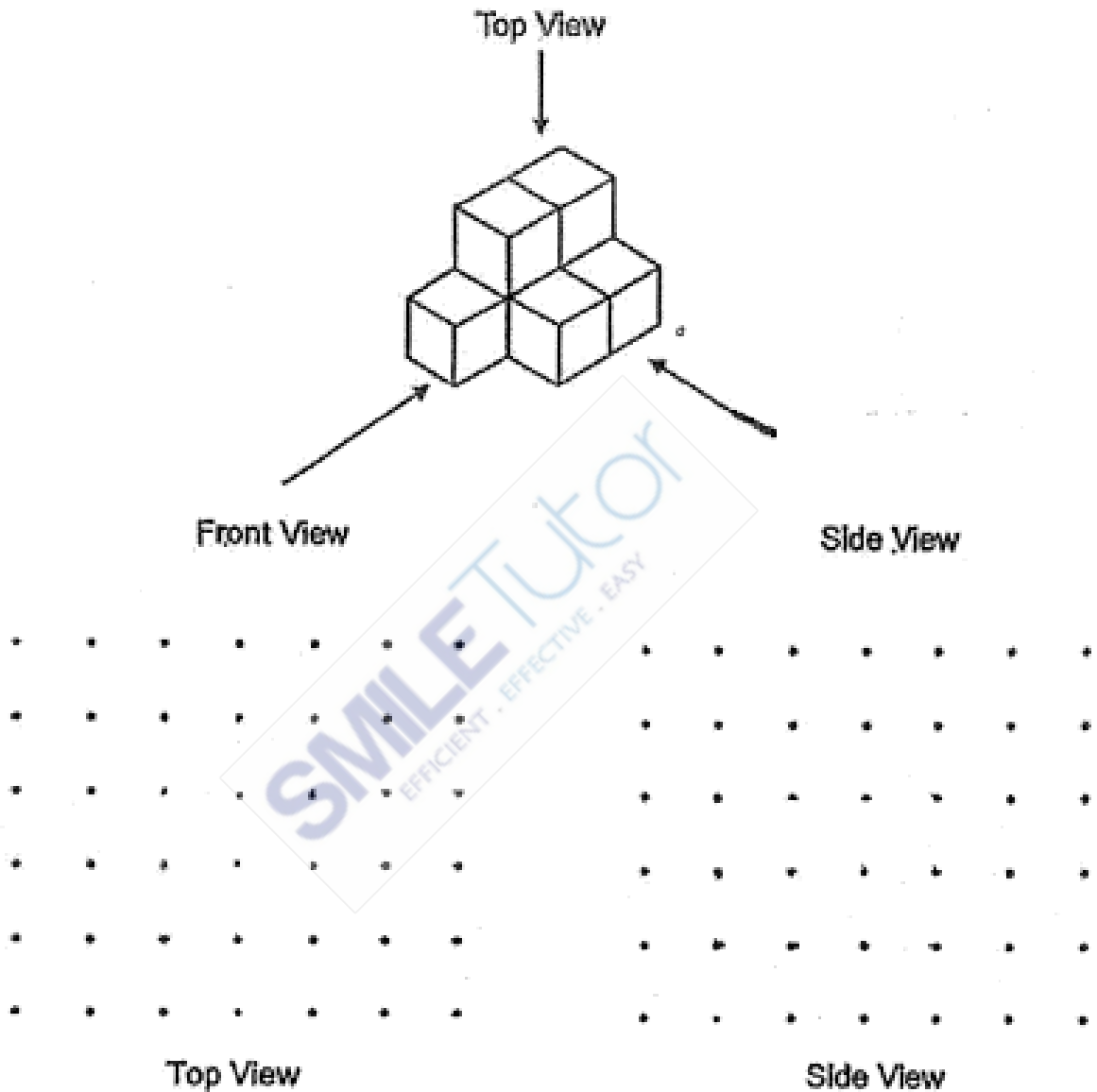
(b) _____

24. ABCD is a parallelogram. $\angle ABE = 15^\circ$ and $\angle BCD = 104^\circ$. E is a point on line AD. Find $\angle AEB$.



Ans: _____°

25. The solid is made up of 7 unit cubes.
Draw the top view and side view of the solid on the square grid below.



26. Kumar travelled 8 km in a taxi from home to the shopping centre. His taxi fare was based on the charges shown below.

First km	\$3.90
Every additional 500 m or part thereof	\$0.30

How much was his taxi fare?

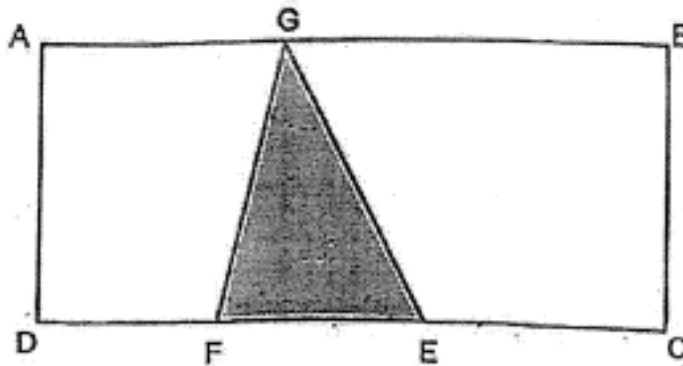
Ans: \$ _____

27. In the number line below, A represents $\frac{1}{4}$ and C represents $\frac{7}{8}$. B is the mid-point between A and C. What fraction is represented by B?



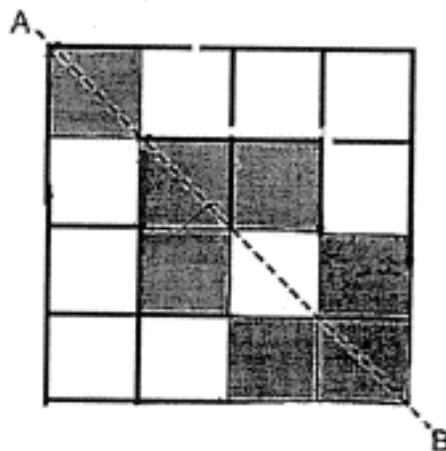
Ans: _____

28. ABCD is a rectangle. G, E and F lie on the sides of the rectangle. The length of CD is thrice the length of EF. The area of the shaded triangle FGE is 16 cm^2 . What is the area of rectangle ABCD?



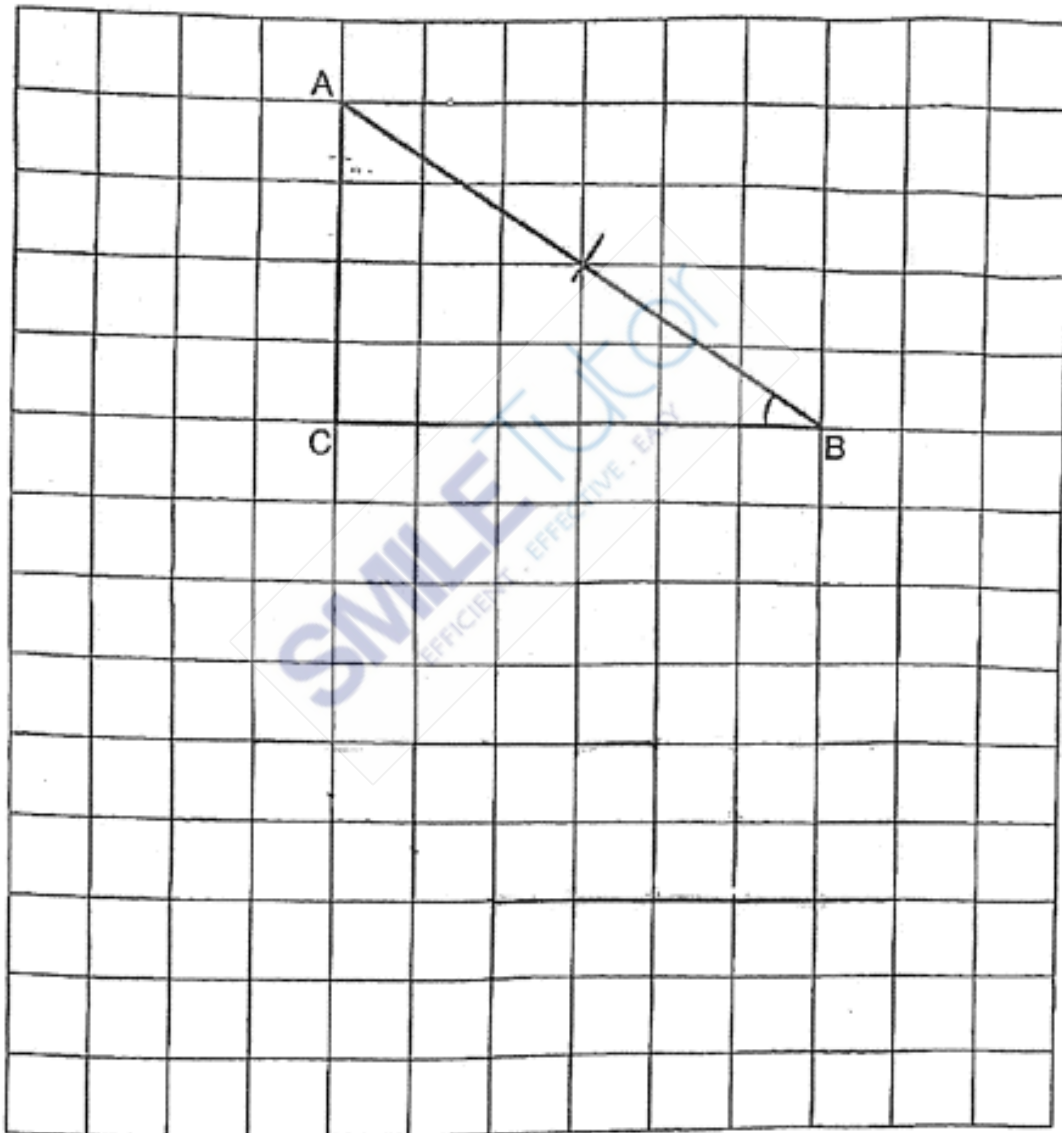
Ans: _____ cm^2

29. The following figure is made of 16 squares. 9 squares are shaded in the figure. Shade 2 squares to form a symmetric figure with AB as the line of symmetry.



30. In the square grid below, triangle ABC has been drawn.

- (a) Measure and write down the size of $\angle ABC$.
- (b) Draw a parallelogram in the square grid such that it has the same perimeter as triangle ABC. The parallelogram must not overlap with triangle ABC.



Ans: (a) _____

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (10 marks)

1. The sum of 4 numbers is 660. One of the numbers is 120.
What is the average of the other 3 numbers?

Ans: _____

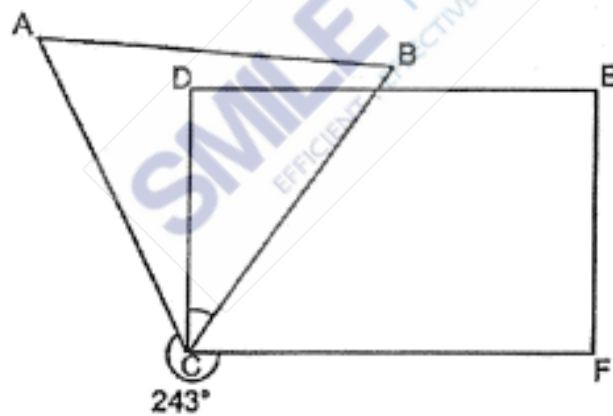
2. Jenny paid \$209 for a dress and 2 shirts. The price of a shirt is $\frac{3}{5}$ of a dress. How much did Jenny pay for the dress?

Ans: \$ _____

3. Colin and Jake ran in a marathon. Jake completed the marathon 20 minutes earlier than Colin. The total amount of time taken by both of them to complete the marathon was 110 minutes. How much time did Colin take to complete the marathon?

Ans: _____ min

4. In the figure below, ABC is an equilateral triangle and DEFC is a rectangle. $\angle ACF = 243^\circ$. Find $\angle DCB$.



Ans: _____ °

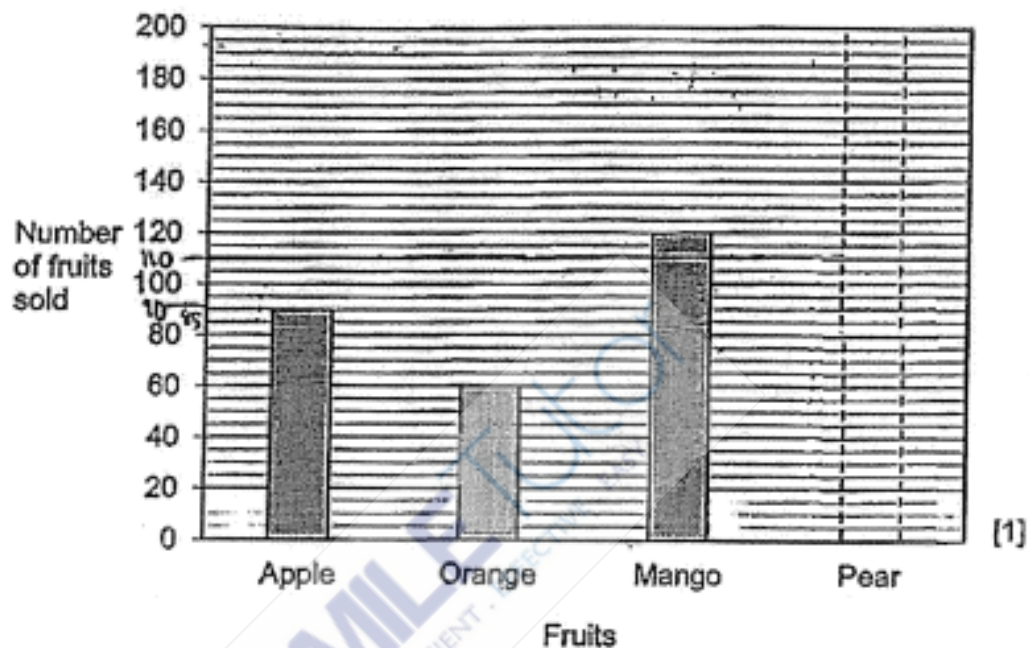
5. Andy and Betty were given some coins each. Andy was given 5 more coins than Betty. Andy was given twenty-cent coins and Betty was given fifty-cent coins.

Each statement below is either true, false, or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

Statement		True	False	Not possible to tell
(a)	The amount of money given to Andy was more than the amount of money given to Betty.			
(b)	The difference in the amount of money between Andy and Betty remained the same after they lost a coin each.			

For questions 6 to 17, show your working clearly in the space provided for each question and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question.
 (45 marks)

6. The bar graph below shows the number of fruits sold at a stall on Monday.



- (a) The total number of fruits sold on Monday was 380.
 Draw the bar that shows the number of pears sold on Monday.
- (b) On Tuesday, the number of apples sold was 108. What was the percentage increase in the number of apples sold on Tuesday?

Ans: (a) _____ [2]

Mary had \$10y. She bought some toys at \$15 each and had \$40 left.

- (a) How many toys did Mary buy? Give your answer in terms of y.
- (b) If $y = 25$, find the number of toys Mary bought.



Ans: (a) _____ [1]

(b) _____ [2]

8. Mrs Ho bought $\frac{8}{9}$ m of string to make some bows. She used $\frac{1}{12}$ m of string to make each bow.
- (a) How many such bows can she make at most?
- (b) What was the length of the string left? Give your answer in the simplest form.

Ans: (a) _____ [1]

(b) _____ [2]

9. Mr Tan had green pens and black pens for sale. He had 275 more black pens than green pens. He sold 70% of the green pens and 20% of the black pens. The number of green pens and black pens sold was the same. How many black pens did he have at first?

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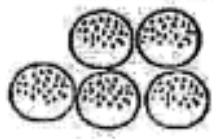

Ans: _____ [3]

10. At a concert, the ratio of the number of adults to the number of children was 5 : 8 at first. After $\frac{2}{3}$ of the number of adults and 252 children left, thrice as many children as adults remained at the concert. How many people were there at the concert at first?



Ans: _____ [3]

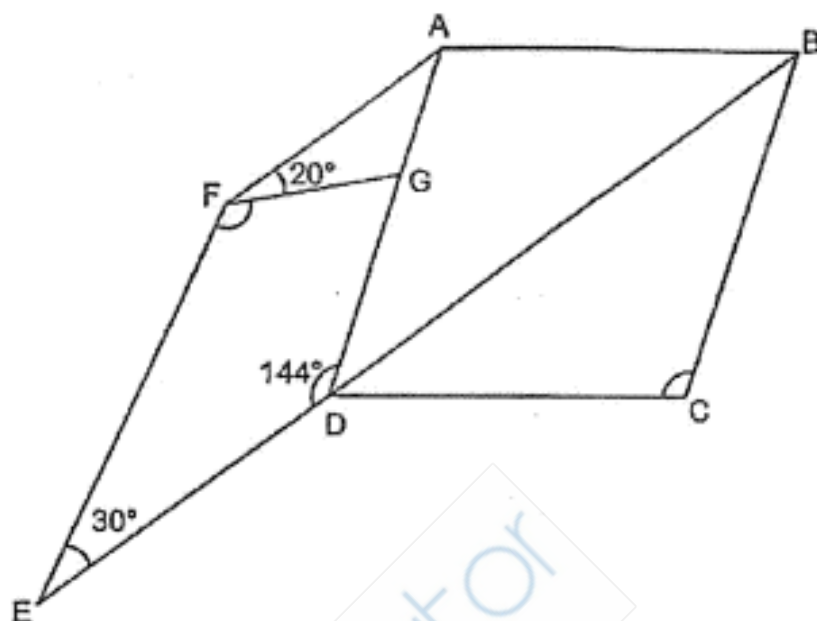
11. At a bakery, buns are only sold in packets of 5 and muffins are only sold in packets of 2. The prices are shown below.

	
5 buns for \$4	2 muffins for \$3

Michael spent the same amount of money on some buns and some muffins. He bought 56 more buns than muffins. How much did he spend on the buns and the muffins in all?

Ans: _____ [4]

- 12 In the figure below, ABCD is a rhombus and ABEF is a trapezium. G is a point on line AD. $\angle GDE = 144^\circ$.



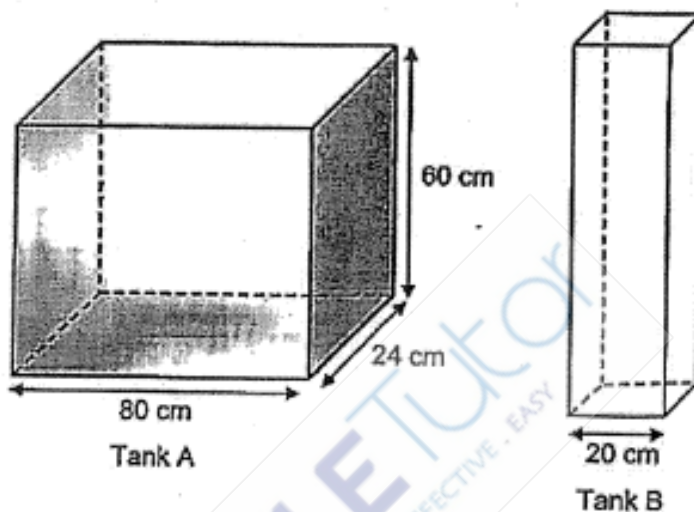
- (a) Find $\angle BCD$.
(b) Find $\angle EFG$.

Ans: (a) _____ [2]

(b) _____ [2]

13. Tank A measures 80 cm long, 24 cm wide and 60 cm high. It is filled with water to the brim. $\frac{1}{3}$ of the water in Tank A is poured into an empty Tank B. Tank B has a square base of edge 20 cm.

- (a) What is the volume of water left in Tank A after $\frac{1}{3}$ of its water is poured into Tank B?
- (b) What is the height of the water level in Tank B after water is poured in?



Ans: (a) _____ [1]

(b) _____ [2]

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14. Mrs Lim bought a rice cooker for \$224 after a discount of 20%.
- (a) What was the price of the rice cooker before discount?
 - (b) She also bought a blender for \$87.50 after discount. The total discount for the rice cooker and the blender was \$93.50. What was the percentage discount given for the blender?



Ans: (a) _____ [1]

(b) _____ [3]

15. The figure is made up of shaded and unshaded squares.
The first three figures are shown below.

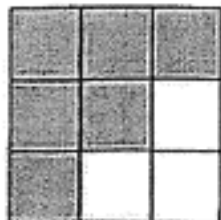


Figure 1



Figure 2

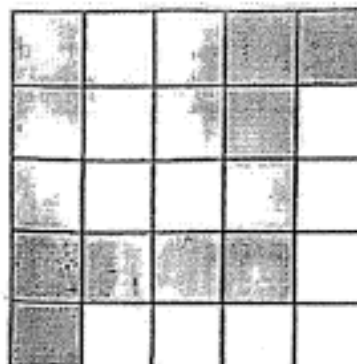


Figure 3

The table below shows the number of shaded and unshaded squares used for each figure.

Figure Number	Number of unshaded squares	Number of shaded squares	Total number of shaded and unshaded squares
1	3	6	9
2	5	11	16
3	7	18	25
4			36

[1]

- (a) Complete the table for Figure 4.
- (b) What is the total number of shaded and unshaded squares used for Figure 33?
- (c) There are 53 unshaded squares used for one of the figures. How many shaded squares are used for that figure?

Ans: (b) _____ [2]

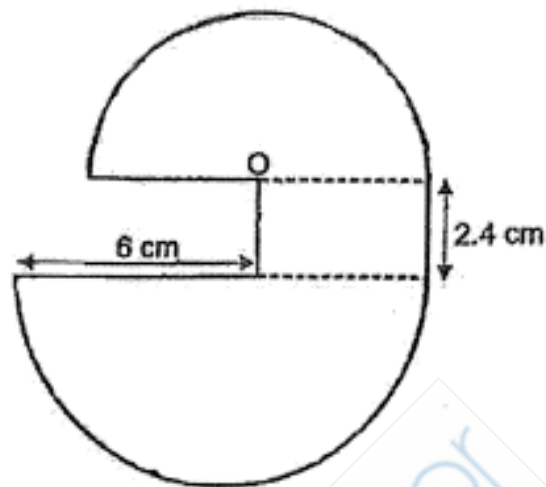
(c) _____ [2]

16. Li May spent $\frac{4}{7}$ of her money on 22 tarts and 46 cupcakes. One cupcake cost as much as 3 tarts. She bought some more tarts with $\frac{1}{6}$ of her remaining money. She spent a total of \$315. How much did she spend on the cupcakes?

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Ans: _____ [5]

- 17 The figure below is formed by a small semicircle, a big semicircle and a rectangle. O is the centre of the small semicircle. The perimeter of the rectangle is 12.8 cm.



- (a) What is the diameter of the small semicircle?
- (b) Find the perimeter of the shaded figure. Take $\pi = 3.14$.

Ans: (a) _____ [1]

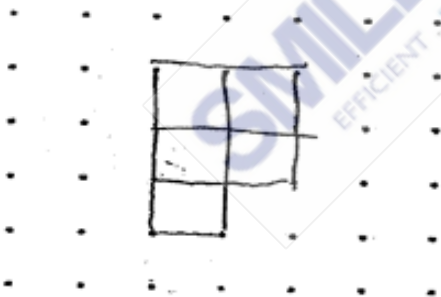
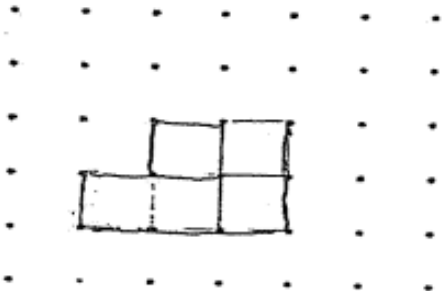
(b) _____ [4]

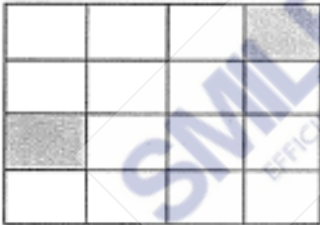
END OF PAPER 2

ANSWER SHEET

Paper 1 Booklet A Q1	2
Paper 1 Booklet A Q2	4
Paper 1 Booklet A Q3	3
Paper 1 Booklet A Q4	1
Paper 1 Booklet A Q5	2
Paper 1 Booklet A Q6	3
Paper 1 Booklet A Q7	1
Paper 1 Booklet A Q8	2
Paper 1 Booklet A Q9	2
Paper 1 Booklet A Q10	4
Paper 1 Booklet A Q11	1
Paper 1 Booklet A Q12	3
Paper 1 Booklet A Q13	4
Paper 1 Booklet A Q14	2
Paper 1 Booklet A Q15	3

Paper 1 Booklet B Q16	$10043/100 = 100.43\text{m}$
Paper 1 Booklet B Q17	<p>12:</p> 1×12 2×6 3×4
	<p>16:</p> 1×16 2×8 4×4
	Ans: 1,2,4
Paper 1 Booklet B Q18	$8/16 = \frac{1}{2}$ $= \$0.50$
Paper 1 Booklet B Q19	$75 - (28 \div 4 + 3) + 15$ $= 75 - (7 + 3) + 16$ $= 75 - 10 + 15$ $= 80$

Q20)	Hospital
Q21)	$\frac{6}{7} = 0.85$ ≈ 0.9 (1 d.p.)
Q22)	$130 \div 50 = 2 \text{ R } 30$ $2 \times 5 = 10$
Q23)	(a) 5780 (b) 7850
Q24)	$\angle AEB = 180^\circ - 104^\circ - 15^\circ$ $= 61^\circ$
Q25)	<div style="text-align: center;">  <p>Top View</p>  <p>Side View</p> </div>
Q26)	$8 - 1 = 7$ $\frac{7}{0.5} = 14$ $3.90 + (14 \times 0.30) = \8.10

Q27)	$\frac{1}{4} + \frac{7}{8}$ $= \frac{2}{8} + \frac{7}{8}$ $= \frac{9}{8}$	$\frac{9}{8} \div 2$ $= \frac{9}{8} \times \frac{1}{2}$ $= \frac{9}{16}$
Q28)	$\frac{1}{2} \times 1u \times H = 16$ $\frac{1}{2} \times 3u \times H = 48$	$16 \times 3 = 48$ $48 \times 2 = 96$
Q29)		

PAPER 2

Q1)	$660 - 120 = 540$ $\frac{540}{3} = 180$				
Q2)	<table> <tr> <td>Shirt ----- 3u</td> <td rowspan="3">} 11u</td> </tr> <tr> <td>2 shirts ----- 6u</td> </tr> <tr> <td>dress ----- 5u</td> </tr> </table> $\$ 209 \div 11 = \$ 19$ $\$ 19 \times 5 = \$ 95$	Shirt ----- 3u	} 11u	2 shirts ----- 6u	dress ----- 5u
Shirt ----- 3u	} 11u				
2 shirts ----- 6u					
dress ----- 5u					

Q3)	$110 + 20 = 130$ $\frac{130}{2} = 65 \text{ min}$						
Q4)	$\angle ACD = 360^\circ - 90^\circ - 243^\circ$ $= 27^\circ$ $\angle DCB = 60^\circ - 27^\circ$ $= 33^\circ$						
Q5)	<table border="1"><tr><td></td><td></td><td>$\sqrt{\quad}$</td></tr><tr><td></td><td>$\sqrt{\quad}$</td><td></td></tr></table>			$\sqrt{\quad}$		$\sqrt{\quad}$	
		$\sqrt{\quad}$					
	$\sqrt{\quad}$						
Q6)	a) $380 - 90 - 60 - 120 = 110$ b) increase $\longrightarrow 108 - 90 = 18$ % increase $\longrightarrow \frac{18}{90} \times 100\% = 20\%$						
Q7)	a) $\frac{10y - 40}{15} = \text{number of toys bought}$ b) $\frac{10(25) - 40}{15} = \frac{250 - 40}{15}$ $= \frac{210}{15}$ $= 14$						
Q8)	a) $\frac{8}{9} \div \frac{1}{12} = 10\frac{2}{3}$ b) $\frac{1}{12} \times 10 = \frac{10}{12}$ $\frac{8}{9} - \frac{10}{12} = \frac{1}{18} \text{ m}$						
Q9)	$7u = 2u + \frac{275}{10} \times 2$ $7u = 2u + 55$ $5u = 55$						

	$u = 11$ $\text{black pens} = 11 \times 10 + 275$ $= 385$
Q10)	$\begin{array}{r} \text{A : C} \\ \hline 5 : 8 \\ 15 : 24 \\ \hline 5 : 15 \end{array}$ $\frac{2}{3} \text{ left} \leftarrow$ $\rightarrow 252 \text{ left}$ $24u - 15u = 9u$ $252 = 9u$ $u = 28$ $28 \times 39 = 1092$
Q11)	<p>Every \$12, 15 buns bought</p> <p>Every \$12, 8 buns bought</p> $15 - 8 = 7$ $\frac{56}{7} = 8$ $8 \times 12 \times 2 = \$192$
Q12)	<p>a) $\angle ADB = 180^\circ - 144^\circ$ $= 36^\circ$ $\angle BCD = \angle BAD = 180^\circ - (36^\circ \times 2)$ $= 108^\circ$</p> <p>b) $\angle FAD = 36^\circ$ $\angle EFG = 360^\circ - 30^\circ - 20^\circ - 36^\circ - 144^\circ$ $= 130^\circ$</p>
Q13)	<p>a) $\frac{80 \times 24 \times 60}{2} \times 2 = 76800 \text{ cm}^3$</p> <p>b) $\frac{80 \times 24 \times 60}{3} = 38400$</p> <p>$\frac{38400}{20 \times 20} = 96 \text{ cm}$</p>

Q14)	<p>a) $\frac{224}{8} \times 10 = \\$ 280$</p> <p>b) $280 - 224 = 56$ (discount for the rice cooker) $\\$93.50 - \\$56 = \\$37.50$ (discount for the blender)</p> <p>Percentage discount = $\frac{\text{discount}}{\text{total cost}} \times 100\%$</p> <p style="text-align: center;">$= \frac{37.50}{37.5+87.5} \times 100\%$</p> <p style="text-align: center;">$= 30\%$</p>								
Q15)	<p>a)</p> <table border="1" data-bbox="384 808 773 900"> <tr> <td>3</td><td>7</td><td></td><td></td></tr> <tr> <td>4</td><td>9</td><td>27</td><td></td></tr> </table> <p>b) $(n+2) \times (n+2) = \text{total}$ $(35) \times (35) = 1225$</p> <p>c) $\frac{53-3}{2} = 25$ Fig 26 used $(26 \times 26) - 53 = 623$</p>	3	7			4	9	27	
3	7								
4	9	27							
Q16)	<p>1 cupcake = $3y$</p> <p>1 tart = $1y$</p> <p>$\frac{4}{7} n = 22y + 46 (3y) = 160y$</p> <p>$\frac{1}{14} n = ? y$</p> <p>$\\$315 = \frac{4}{7} n + \frac{1}{14} n = \frac{9}{14} n$</p> <p>$\frac{1}{14} n = \\35</p> <p>$\frac{8}{14} n = \\$35 \times 8 = \\$280 = 160y$</p> <p>$y = \\$1.75$</p>								

	<p>cupcakes = $46(3)(1.75)$</p> <p>= \$241.50</p>
Q17)	<p>a) $12.8 - (2.4 \times 2) = 8\text{cm}$</p> <p>b) perimeter = $(2.4 \times 2) + \left[6 + \frac{2(6)(3.14)}{2} \right] + \left[4 + \frac{8(3.14)}{2} \right]$</p> <p>= 46.2cm</p>



METHODIST GIRLS' SCHOOL (PRIMARY) PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

1 Which one of the following fractions is nearest to 1?

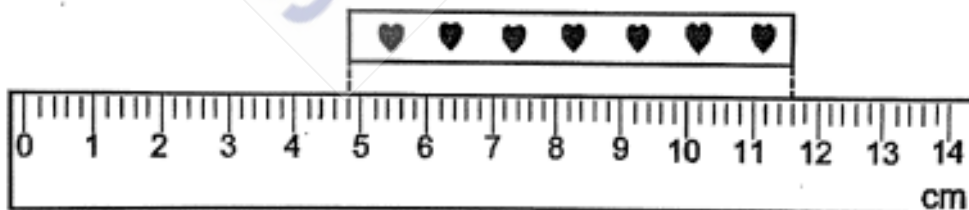
(1) $\frac{2}{3}$

(2) $\frac{4}{5}$

(3) $1\frac{3}{4}$

(4) $1\frac{3}{10}$

2 What is the length of the ribbon below?



(1) 6.4 cm

(2) 6.8 cm

(3) 6.9 cm

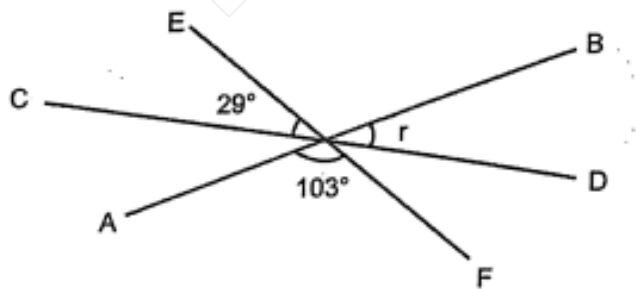
(4) 11.6 cm

- 3 The pie chart below shows the favourite food of a group of children.
 What is the ratio of the number of children who like burger to the number of children who like pasta?



- (1) 1 : 7
 (2) 3 : 7
 (3) 6 : 5
 (4) 10 : 7

- 4 AB, CD and EF are straight lines. Find $\angle r$.

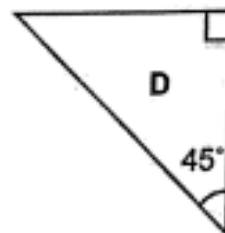
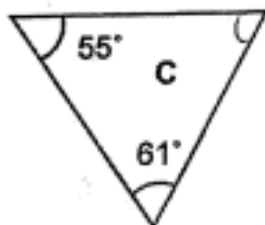
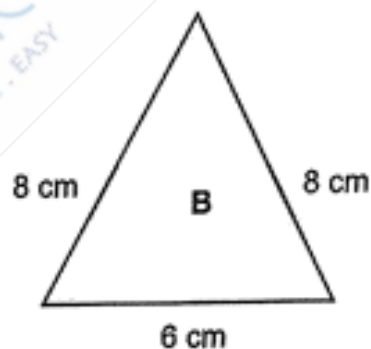
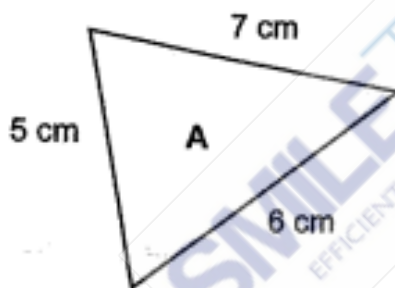


- (1) 29°
 (2) 48°
 (3) 61°
 (4) 77°

5 Express 1.8 as a percentage.

- (1) 0.018%
- (2) 0.18%
- (3) 1.8%
- (4) 180%

6 Which of the following are isosceles triangles?



- (1) A and B only
- (2) B and C only
- (3) B and D only
- (4) A, B and D only

- 7 The product of two numbers is 55. One of the numbers is 5.
Find the average of the two numbers.

- (1) 8
- (2) 10
- (3) 11
- (4) 16

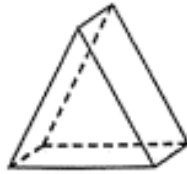
- 8 Adrian, Betty and Chandran shared 126 marbles in the ratio 2 : 4 : 3.
How many marbles did Betty have?

- (1) 14
- (2) 28
- (3) 42
- (4) 56

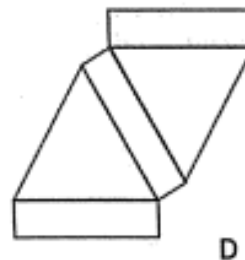
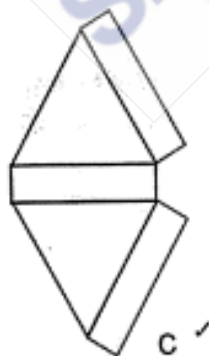
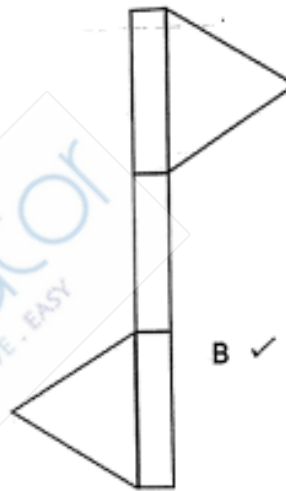
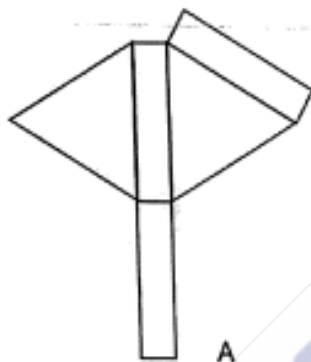
- 9 Mei Ling baked $5y$ tarts. She gave her mother 25 of them and packed the rest equally into 3 boxes. How many tarts were there in each box?

- (1) $\frac{5y}{3}$
- (2) $\frac{5y+25}{3}$
- (3) $\frac{5y}{3} - 25$
- (4) $\frac{5y-25}{3}$

10 The solid below is a prism.



Which of the following nets can be folded to form the solid above?

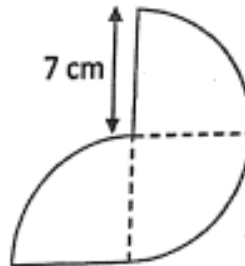


- (1) A and D only
- (2) B and C only
- (3) A, B and D only
- (4) B, C and D only

(2)

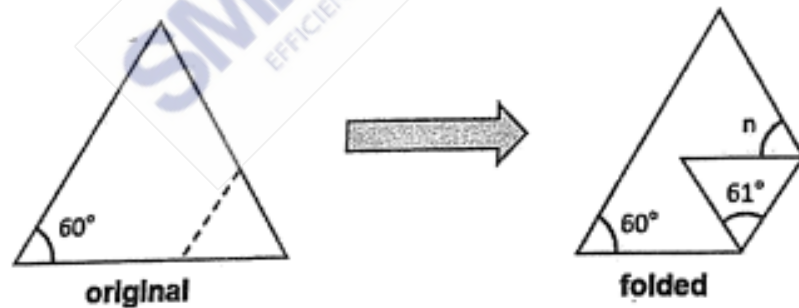
- 11 The figure below is made up of 3 identical quarter circles with radius 7 cm.

Find its perimeter. (Take $\pi = \frac{22}{7}$)



- (1) 47 cm
- (2) 75 cm
- (3) 115.5 cm
- (4) 129.5 cm

- 12 A piece of paper in the shape of an equilateral triangle is folded along the dotted line as shown. Find $\angle n$.



- (1) 59°
- (2) 60°
- (3) 61°
- (4) 62°

- 13 Joanna and Elicia had an equal number of stickers at first. After Joanna gave away 30 of her stickers and Elicia bought another 12 stickers, Elicia had four times as many stickers as Joanna. How many stickers did each of them have at first?

- (1) 36
 (2) 42
 (3) 44
 (4) 56

- 14 Mrs Chan only had the following coins in her wallet.



She took three coins from her wallet and dropped them into a donation box. Which one of the following could not be the amount she donated?

- (1) \$0.35
 (2) \$0.75
 (3) \$1.15
 (4) \$1.65

- 15 There were $\frac{5}{7}$ as many red marbles as blue marbles in a jar. Dave took some blue marbles out of the jar and replaced them with the same number of red marbles. The number of red marbles became $\frac{5}{9}$ of all the marbles in the jar. Which of the following is a possible number of blue marbles that were replaced?

- (1) 9
 (2) 10
 (3) 36
 (4) 63

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

16 Write down all the common multiples of 7 and 5 that are smaller than 120.

Ans: _____

17 Find the value of $2.7 \div 90$.

Ans: _____

18 Find the value of $\frac{2}{3} + \frac{4}{7}$.

Give your answer as a mixed number in the simplest form.

Ans: _____

- 19 Find the value of $\frac{9w-7}{5}$ when $w = 8$.

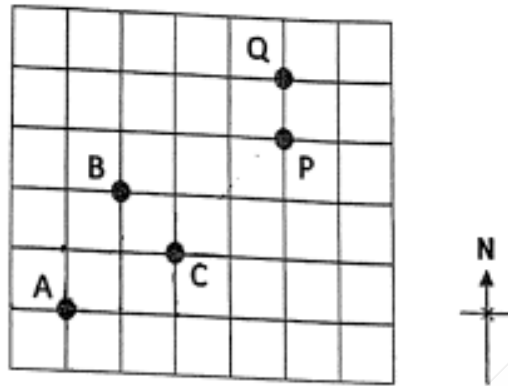
Ans: _____

- 20 Megan took 45 minutes to travel from Point A to Point B at an average speed of 72 km/h. Find the distance between Point A and Point B.

Ans: _____ km

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

21



Based on the square grid above, fill in the blanks with A, B, C, P or Q.

(a) Point _____ is south of point _____

(b) Point _____ is north-east of point _____

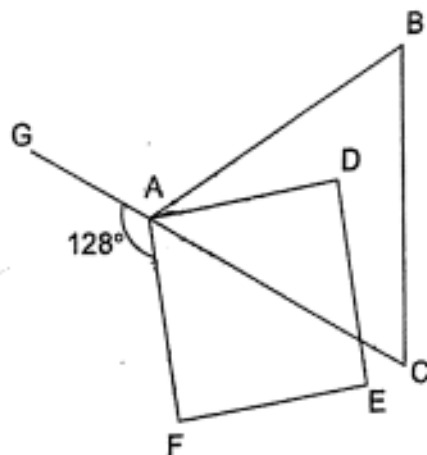
22 The table shows the charges for bicycle rental.

Bicycle for Rental	
For the first 1 hour	\$6.00
For every additional 30 minutes or part thereof	\$2.50

Jane rented a bicycle from 5.30 p.m. to 7.45 p.m.
How much did she pay?

Ans: \$ _____

- 23 ABC is an equilateral triangle and ADEF is a square.
 GAC is a straight line. Find $\angle BAD$.

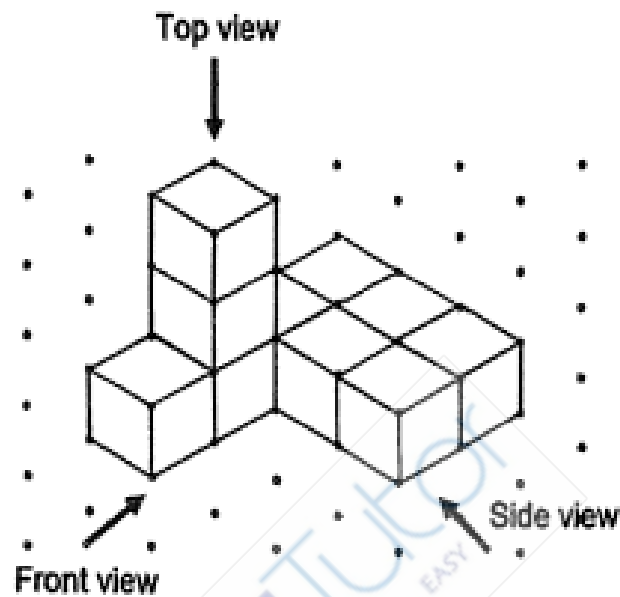


Ans: _____°

- 24 An empty tank has a rectangular base measuring 30 cm by 20 cm.
 Water from 5 bottles is emptied into the tank without spillage.
 Each bottle contains 1.5 l of water. What is the height of water in the tank?

Ans: _____ cm

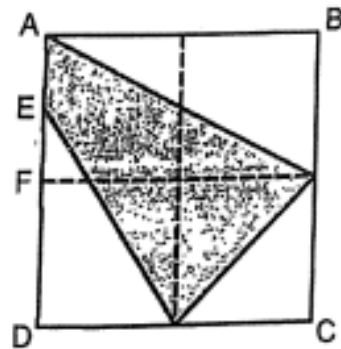
- 25 The solid below is made up of 10 cubes.
 Draw the front view and top view (as seen from the front view) of the solid in the grid below.



Ans:

<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> </div> <div style="text-align: center;"> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <u>Front View</u> <u>Top View</u> </div>	
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- 26** The figure is made up of 4 identical squares. $AE = EF$.
 What fraction of the figure is shaded?



Ans: _____

- 27** Alan bought some stalks of flowers. 60% of them are roses and the rest are orchids. 50% of the roses are red roses. There are 24 red roses.
 How many stalks of orchids are there?

Ans: _____

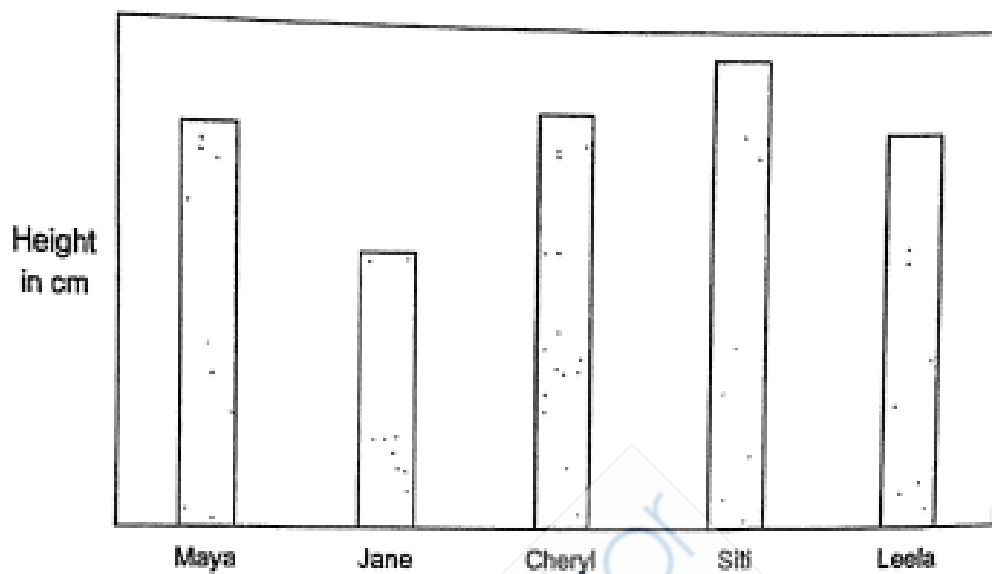
- 28 Kim baked 259 more cookies than Li Min. After each of them sold some cookies, Kim had $\frac{2}{5}$ of her cookies left and Li Min had $\frac{3}{4}$ of her cookies left. Both Kim and Li Min had the same number of cookies left. How many cookies did Li Min bake at first?

Ans: _____

- 29 A bookshop had 600 pens to sell over two weeks. In the first week, the ratio of the number of pens sold to the number of pens unsold was 1 : 2. In the second week, the ratio of the number of pens sold to the number of pens unsold was 5 : 3. How many pens did the bookshop sell in the second week?

Ans: _____

30 The bar graph below shows the height of 5 girls.



Each statement below is either true, false, or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

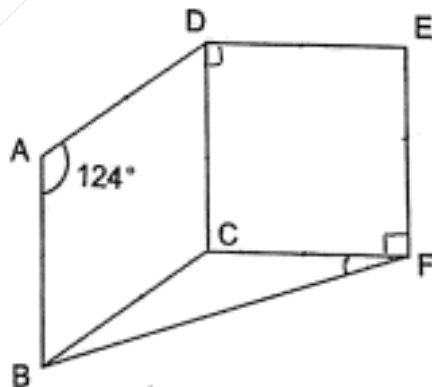
Statement	True	False	Not possible to tell
(a) Jane is 15 cm shorter than Maya.			
(b) The average height of the 5 girls is more than Jane's height but less than Siti's height.			
(c) The ratio of Jane's height to Siti's height is 1 : 2.			

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 Prawns are sold at the supermarket at \$1.35 per 100 g.
 Kelly bought 3.5 kg of prawns. How much did she pay?

Ans: \$ _____

- 2 ABCD is a rhombus and CDEF is a square. $\angle BAD$ is 124° .
 Find $\angle BFC$.



Ans: _____°

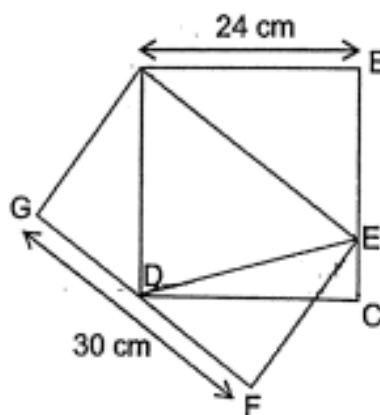
- 3 John saw two different advertisements for two identical rackets sold at \$180 before discount.



How much money did John save by buying from the cheaper shop?

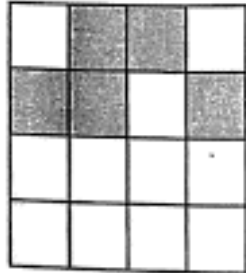
Ans: \$ _____

- ④ ABCD is a square and AEF is a rectangle. $AB = 24$ cm and $GF = 30$ cm. Point E lies on BC while Point D lies on FG. Find the length of AG.

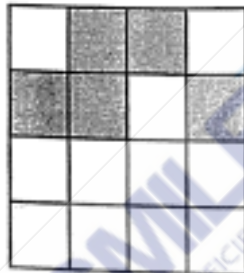


Ans: _____ cm

- 5 The figure below shows part of a symmetric figure.



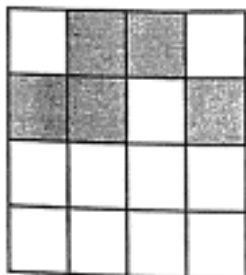
- (a) Using the given dotted line as the line of symmetry, complete the symmetric figure by shading the correct square(s) below. [1]



- (b) Jane used a **different** line of symmetry that required her to shade **only two squares** to complete a symmetric figure. Which two squares did Jane shade?

Shade in the figure below to show your answer.

[1]



For questions 6 to 17, show your working clearly and write your answers in the space provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

- 6 A pen costs \$ p . A notebook costs \$2 more than the pen.
- (a) What is the cost of 3 pens and 2 notebooks?
Express your answer in terms of p in its simplest form.

Ans: (a) _____ [1]

- (b) Lee Lian paid \$22.50 for 3 pens and 2 notebooks.
Find the cost of one notebook.

Ans: (b) _____ [2]

- 7 Su Ling wanted to buy a laptop with her savings.
 The line graph below shows her savings at the end of each week.



- (a) In which week did Su Ling save the most?

Ans: (a) _____ [1]

- (b) At the end of week 6, Su Ling only managed to save $\frac{1}{4}$ of the amount she needed to buy the laptop. How much more does she need to save?

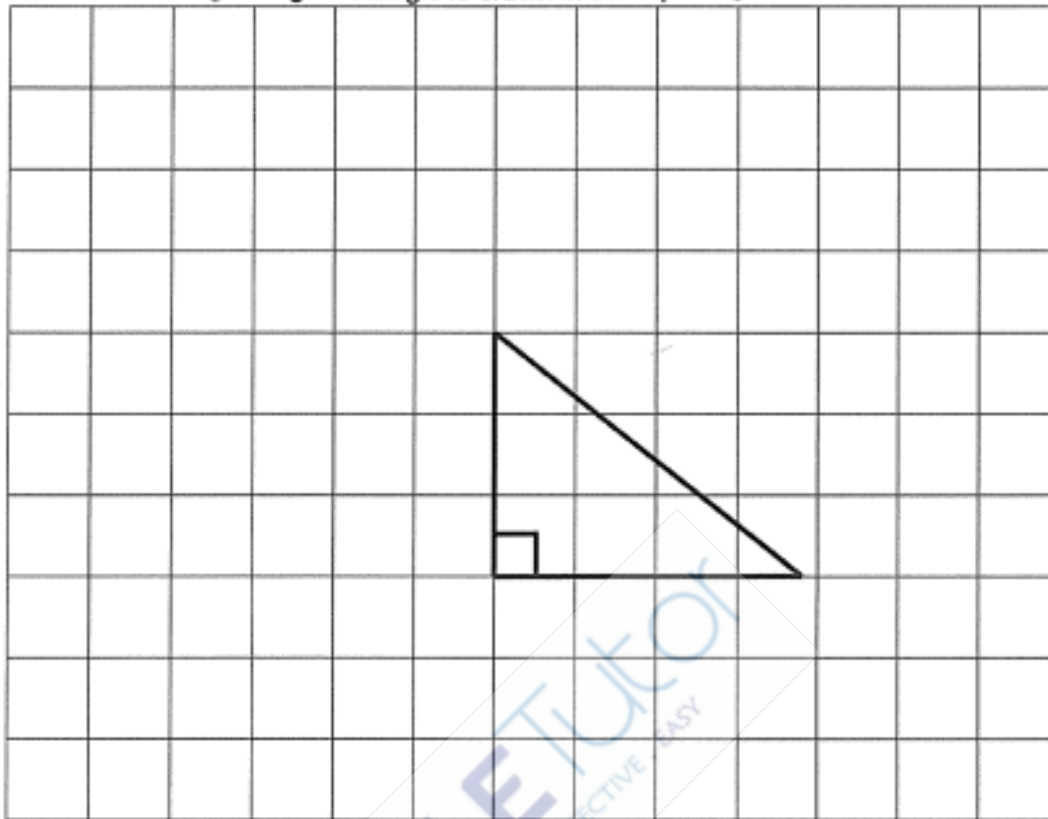
Ans: (b) _____ [2]

- 8 Alex and Ben started cycling at the same time from the start of a 6.12 km cycling path. Both did not change their speeds from the start to finish. Alex cycled at 340 m/min. When he reached the end of the path, Ben was 450 m behind him. Find Ben's speed in m/min.



Ans: _____ [3]

9 A right-angled triangle is drawn in the square grid below.



- (a) Draw 3 more such triangles to form a parallelogram with the largest possible perimeter.

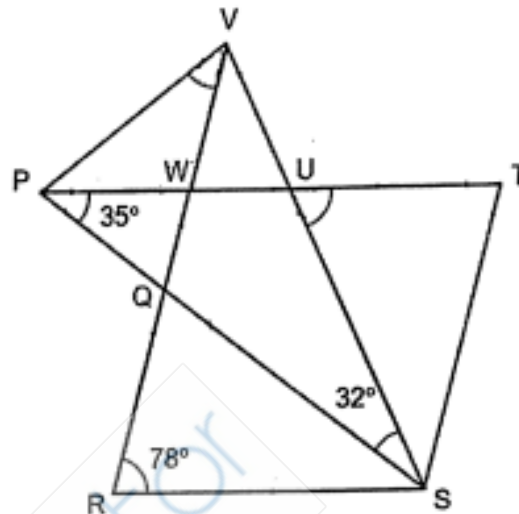
[2]

- (b) Measure and write the length of the longest side of the parallelogram.

Ans: (b) _____ [1]

- 10 PSV is an isosceles triangle, $PS = VS$. RSTW is a rhombus. PT and RV are straight lines. $\angle WPQ = 35^\circ$ and $\angle PSV = 32^\circ$.

(a) Find $\angle TUS$.

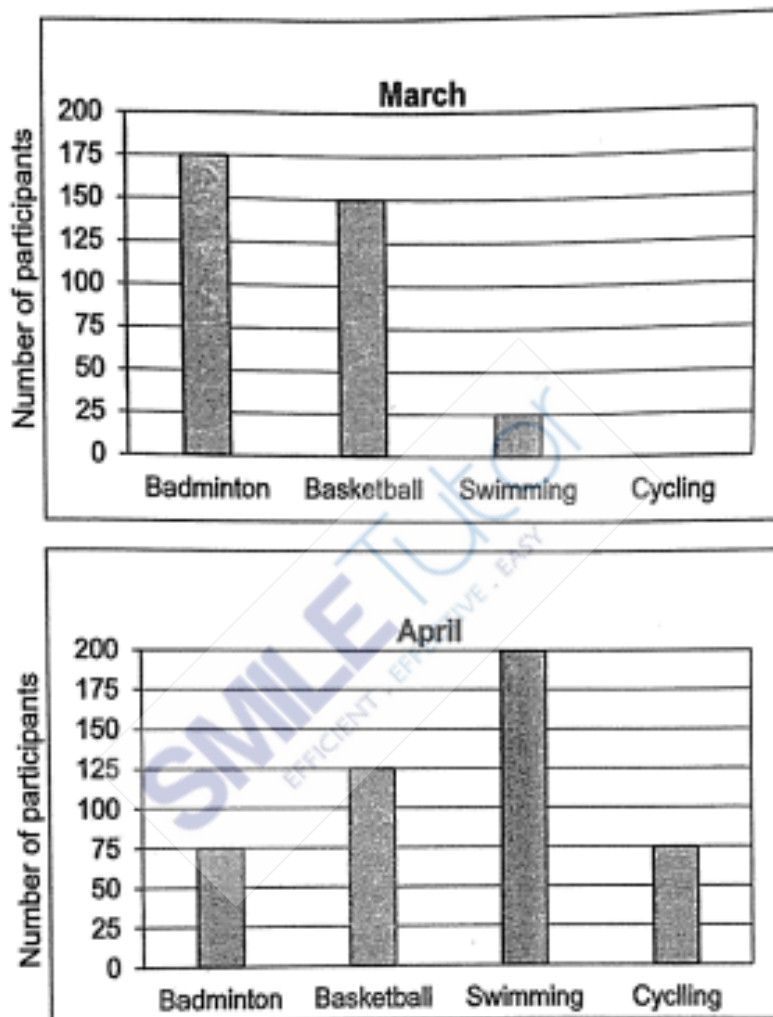


Ans: (a) _____ [2]

(b) Find $\angle PVR$.

Ans: (b) _____ [2]

- 11 The two bar graphs below show the number of members in a sports club who took part in 4 types of sports in March and April. The bar for the number of members who participated in Cycling in March has not been drawn.



- (a) In March, the ratio of the number of people who took part in Basketball to the number of people who took part in Cycling was 3 : 2. How many people took part in Cycling in March?

Ans: (a) _____ [1]

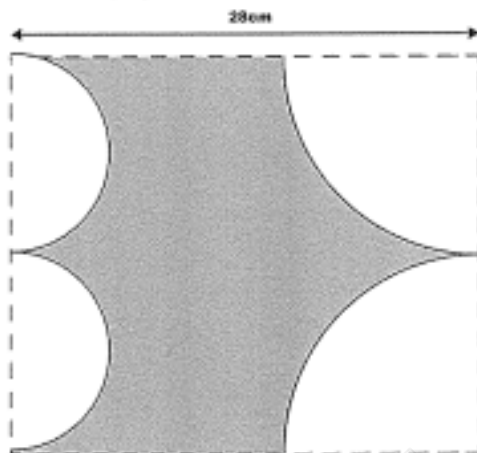
- (b) What was the percentage decrease in the number of people who took part in Badminton from March to April?
Give your answer correct to 2 decimal places.

Ans: (b) _____ [2]

- (c) An entrance fee was charged to those who took part in swimming. A total of \$528.75 was collected in March and April. How much was the entrance fee?

Ans: (c) _____ [1]

- 12 Two identical semicircles and two identical quadrants are cut out from a square piece of grey paper as shown below. Taking $\pi = \frac{22}{7}$,



- (a) find the perimeter of the remaining paper.

Ans: (a) _____ [2]

- (b) find the area of the remaining paper.

Ans: (b) _____ [2]

- 13 The average height of a group of children was 129.6 cm. One of the children's height was wrongly recorded as 162 cm when it should have been 126 cm. As a result, the average height calculated became 132.6 cm. How many children were there in the group?



Ans: _____ [3]

- 14 Mariam baked some strawberry, apple and pear tarts. There were 12 more strawberry tarts than pear tarts and 20 more apple tarts than strawberry tarts. She sold $\frac{3}{8}$ of the apple tarts and half of the strawberry tarts. She had 145 tarts left.

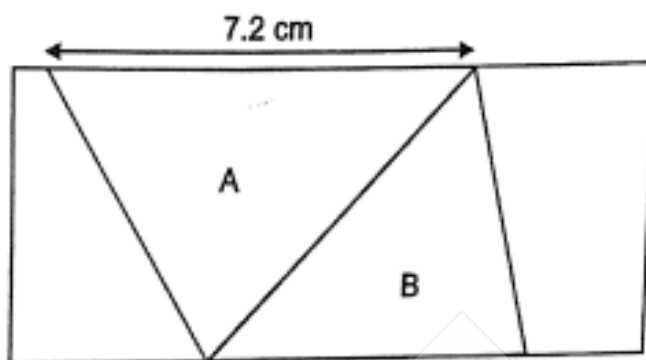
(a) How many pear tarts did she bake?

Ans: (a) _____ [2]

How many tarts did she sell altogether?

Ans: (b) _____ [2]

- 15 In the rectangle below, the area of triangle A is $\frac{1}{3}$ the area of the rectangle. The area of triangle B is $\frac{1}{4}$ the area of the rectangle. The area of triangle A is 5.85 cm^2 more than the area of triangle B.



- (a) Find the area of the rectangle.

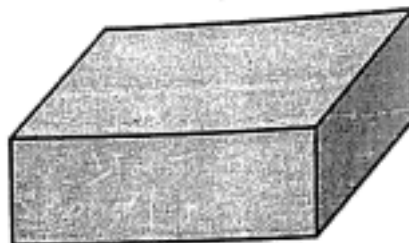
Ans: (a) _____ [1]

- (b) Find the perimeter of the rectangle.

Ans: (b) _____ [3]

- 16 The wooden block as shown in Diagram A was dipped completely into a pail of paint.

Diagram A



Then, it was cut along the dotted lines as shown in Diagram B to form the solid as shown in Diagram C. The solid formed could be divided into 6 identical cubes.

Diagram B

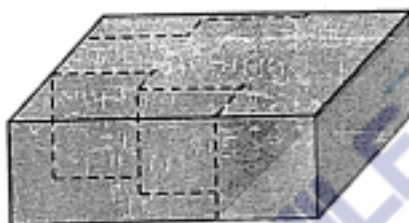
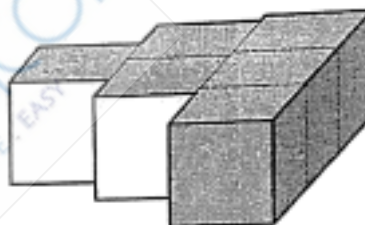


Diagram C



The total unpainted area of the solid in Diagram C was 337.5 cm^2 .

- (a) Find the volume of the wooden block at first.

Ans: (a) _____ [3]

- (b) What percentage of the wooden block is the solid formed in Diagram C? Give your answer correct to 1 decimal place.



Ans: (b) _____ [2]

- 17 A deck of cards is numbered 1 to 50. Pamela draws 3 cards from it. The sum of the numbers on any of the 2 cards are 60, 28 and 58.

(a) Find the 3 numbers.

Ans: (a) _____ [3]

- (b) She draws a fourth card and the average of the 4 numbers is 20. What is the number on the fourth card?

Ans: (b) _____ [2]

ANSWER SHEET

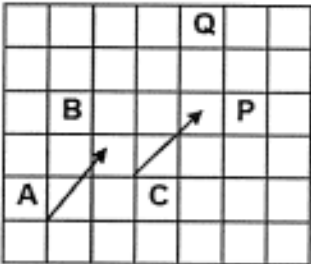
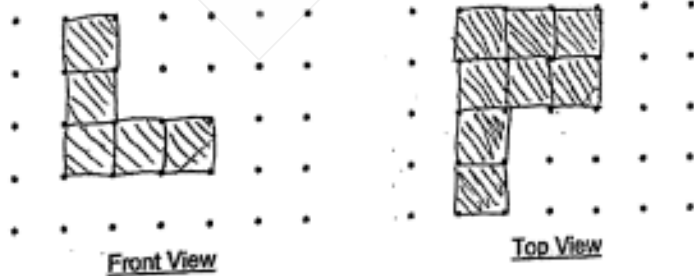
PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	4	2	4	3	1	4	4	3

Q 11	Q12	Q13	Q14	Q15
1	4	3	4	2

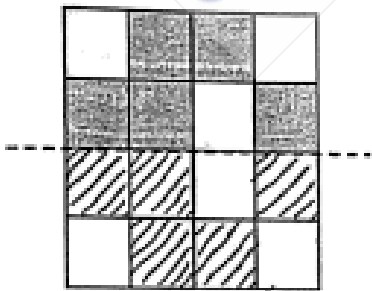
PAPER 1 BOOKLET B

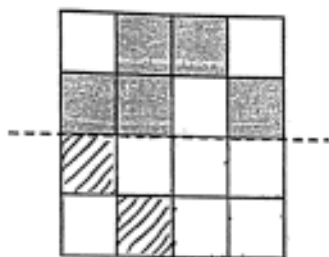
Q16)	35, 70, 105
Q17)	$= 2.7 \div 9 \div 10$ $= 0.3 \div 10$ $= 0.03$
Q18)	$\frac{2}{3} + \frac{4}{7}$ $= \frac{14}{21} + \frac{12}{21}$ $= \frac{26}{21}$ $= 1 \frac{5}{21}$
Q19)	$9w = 8 \times 9$ $= 72$ $72 - 7 = 65$ $65 \div 5 = 13$
Q20)	Distance = speed x time 45 min = $\frac{3}{4}$ hour $= 72 \times \frac{3}{4}$ $= 54$ km

Q21)	 <p>a) Point P is south of point Q b) Point P is north-east of point C</p>
Q22)	<p>Total time = 135 minute First hour (60 minute) = \$6.00 Next 75 minute = \$2.50 x 3 = \$7.50</p> <p>Total = \$7.50 + \$6.00 = \$13.50</p>
Q23)	<p>$\angle GAC = 180^\circ - 128^\circ = 52^\circ$ $\angle FAD = 90^\circ - 52^\circ = 38^\circ$ $\angle BAD = 60^\circ - 38^\circ = 22^\circ$</p>
Q24)	<p>$1.5 \times 5 = 7.5 \text{ litre}$ = 7500 cm^3 $30 \times 20 = 600$ $7500 \div 600 = 12.5 \text{ cm}$</p>
Q25)	<p>Ans:</p>  <p style="text-align: center;">Front View Top View</p>
Q26)	<p>$C - \frac{1}{2} \times 4u = 2u$ $B - \frac{1}{2} \times 2u = 1u$ $A - \frac{1}{2} \times 3u = 1.5u$ Shaded = $\frac{7}{16}$</p>

Q27)	<p>** rose : orchid 60% : 40%</p> <div><div>24</div><div>24</div></div> <p>60% = 48 10% = 48 ÷ 6 = 8 40% = 4 x 8 = 32</p>																
Q28)	<div><div><p>15u – 8u = 7u 7u = 259 1u = 259 ÷ 7 = 37 Li Min @ first = 8u 8u = 37 x 8 = 296</p></div><div><p>Kim Li Min</p><p>$\frac{2}{5} \times 3 = \frac{6}{15}$ $\frac{3}{4} \times 2 = \frac{6}{8}$</p></div></div>																
Q29)	<div><div><p>Method 1</p><p>First week</p><p>Sold : Unsold : Total</p><p>1 : 2 : 3</p><p>200 : 400 : 600</p><p>8u = 400 1u = 400 ÷ 8 = 50 5u = 5x50 = 250</p></div><div><p>2nd week</p><p>Sold : Unsold : Total</p><p>5 : 3 : 8</p><p>250 : 150 : 400</p></div></div>																
Q30)	<table><tr><th>Statement</th><th>True</th><th>False</th><th>Not possible to tell</th></tr><tr><td>(a) Jane is 15 cm shorter than Maya.</td><td></td><td></td><td>/</td></tr><tr><td>(b) The average height of the 5 girls is more than Jane's height but less than Sid's height.</td><td>/</td><td></td><td></td></tr><tr><td>(c) The ratio of Jane's height to Sid's height is 1 : 2.</td><td></td><td>/</td><td></td></tr></table>	Statement	True	False	Not possible to tell	(a) Jane is 15 cm shorter than Maya.			/	(b) The average height of the 5 girls is more than Jane's height but less than Sid's height.	/			(c) The ratio of Jane's height to Sid's height is 1 : 2.		/	
Statement	True	False	Not possible to tell														
(a) Jane is 15 cm shorter than Maya.			/														
(b) The average height of the 5 girls is more than Jane's height but less than Sid's height.	/																
(c) The ratio of Jane's height to Sid's height is 1 : 2.		/															

PAPER 2

Q1)	$100\text{g} \rightarrow \1.35 $1\text{g} \rightarrow \$1.35 \div 100$ $= \$0.0135$ $3500\text{g} = \$0.0135 \times 3500$ $= \$47.25$
Q2)	$\angle FCB = 360^\circ - 90^\circ - 124^\circ$ $= 146^\circ$ $\angle BFC = (180^\circ - 146^\circ) \div 2$ $= 17^\circ$
Q3)	<i>shop W</i> $\$180 - \$50 = \$130$ (discounted Price) <i>shop Y</i> $100\% = \$180$ $25\% = \$180 \div 4 = \45 $\$180 - \$45 = \$135$ $\$135 - \$130 = \$5$
Q4)	Area of square $= 24 \times 24 = 576$ Area of rectangle $= 576 \div 30 = 19.2 \text{ cm}$
Q5)	<p>a)</p>  <p>b)</p>



Q6)

a) Pen = \$p
 Notebook = \$(p+2)
 3 pen = \$3p
 2 notebooks = \$(2p+4)
 Total = \$(5p + 4)

b) 3 pens + 2 notebooks = \$22.50
 1 pen = \$p
 1 notebook = \$p+2
 $5p = \$22.50 - 4 = \18.50
 $1p = \$18.50 \div 5 = \3.70
 1 notebook = \$3.70 + 2 = \$5.70

Q7)

a) Week 3

b) $\frac{1}{4} = 520$

Amount of money she still needs to save = $1 - \frac{1}{4} = \frac{3}{4}$
 $\frac{3}{4} = 520 \times 3 = \1560

Q8)

6.12km = 6120m

Time taken for Alex to complete path

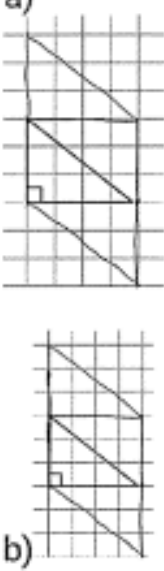
$= D \div S = 6120 \div 340 = 18$

Alex = 18 minutes Ben = 450m behind

$6120 - 450 = 5670$ (*distance Ben travelled after 18 minutes*)

18 minutes = 5670m

Time = D ÷ S = 5670 ÷ 18 = 315m/minute

Q9)	<p>a)</p>  <p>b)</p>
Q10)	<p>a) $\angle SVP = (180^\circ - 32^\circ) \div 2 = 74^\circ$ $\angle WPV = 74^\circ - 35^\circ = 39^\circ$ $\angle TUS = \angle VUP = 180^\circ - 74^\circ - 39^\circ = 67^\circ$</p> <p>b) $\angle TWR = (360^\circ - 78^\circ - 78^\circ) \div 2 = 102^\circ$ $\angle PWQ = 180^\circ - 102^\circ = 78^\circ$ $\angle VWP = 180^\circ - 78^\circ = 102^\circ$ $\angle PVR = 180^\circ - 102^\circ - 39^\circ = 39^\circ$</p>
Q11)	<p>a) Basketball : cycling 3 : 2</p> <p>$3u = 150$ $1u = 150 \div 3$ $= 50$ $2u = 50 \times 2$ $= 100$</p> <p>b) $\text{Percentage decrease} = \frac{\text{percentage decrease}}{\text{original}} \times 100\%$ Badminton March = 175 April = 75 $175 - 75 = 100$ $\frac{100}{175} \times 100\% = 57.14\%$</p> <p>c) People who took part in swimming $= 25 + 200$ $= 225$ 225 people = \$528.75 Entrance Fee Per person = $\\$528.75 \div 225$ $= \\$2.35$</p>

Q12)	<p>a) $\frac{1}{2} \times \frac{22}{7} \times 14 = 22$ $\frac{1}{4} \times \frac{22}{7} \times 14 \times 2 = 22$ $14 + 22 + 22 + 14 + 22 + 22 = 116\text{cm}$</p> <p>b) area of whole paper = $28 \times 28 = 784$ area of 2 semicircles = $\frac{22}{7} \times 7 \times 7 = 154$ area of semicircle = $\frac{1}{2} \times \frac{22}{7} \times 7 \times 7 = 77$ $784 - (77 \times 2) - (154 \times 2) = 322\text{ cm}^2$</p>
Q13)	<p>different in height = $162 - 126 = 36$ different in average = $132.6 - 129.6 = 3$ no of children in the group = $36 \div 3 = 12$</p>
Q14)	<p>a) $4u + 6 + 5u + 20 + 8u = 145$ $17u = 145 - 26$ $= 119$ $1u = 119 \div 17$ $= 7$</p> <p>b) 67</p>
Q15)	<p>a) $1u = 5.85\text{cm}^2$ $? = 12u$ $12u = 5.85 \times 12$ $= 70.2\text{ cm}^2$</p> <p>b) $8 \times 5.85 = 46.8$ $46.8 \div 7.2 = 6.5$ $70.2 \div 6.5 = 10.8$ $2 \times (10.8 + 6.5) = 34.6\text{ cm}$</p>
Q16)	<p>a) 6 faces = 337.5 cm^2 1 face = $337.5 \div 6 = 56.25\text{ cm}^2$ Length = $\sqrt{56.25} = 7.5$ Vol of block = $(3 \times 7.5) \times (3 \times 7.5) \times 7.5 = 3796.875\text{ cm}^3$</p> <p>b) $\frac{6}{9} \times 100\% = 66.7\%$</p>
Q17)	<p>a) 13, 15, 45 b) $13 + 15 + 45 = 73$</p>

	$80 - 73 = 7$
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METHODIST GIRLS' SCHOOL (PRIMARY) SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.
(20 marks)

1 2 hundred thousands + 9 thousands + 2 hundreds + 2 ones = _____

(1) 20 922

(2) 29 202

(3) 200 922

(4) 209 202

2 Find the value of $742.5 \div 7$. Round your answer to 1 decimal place.

(1) 106.0

(2) 106.1

(3) 160.0

(4) 160.1

3 Express 40 cm as a fraction of 2 m.

(1) $\frac{1}{5}$

(2) $\frac{1}{20}$

(3) $\frac{1}{50}$

(4) $\frac{1}{200}$

4 Find the value of $\frac{3}{4} \div \frac{1}{12}$.

(1) $\frac{1}{16}$

(2) $\frac{1}{9}$

(3) 9

(4) 16

5 A machine can print 70 cards in 3 minutes.
At this rate, how many cards can it print in 1 hour?

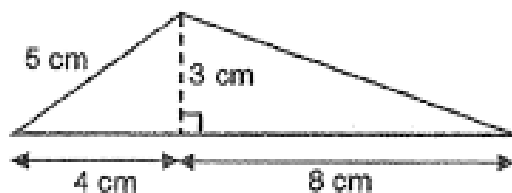
(1) 210

(2) 1400

(3) 2100

(4) 4200

6 Find the area of the triangle shown below.



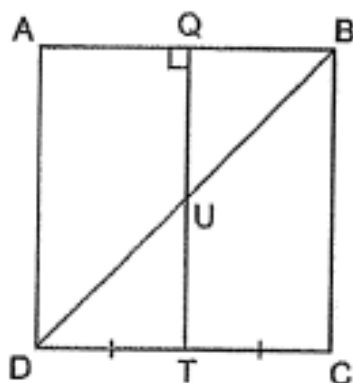
(1) 12 cm^2

(2) 18 cm^2

(3) 20 cm^2

(4) 30 cm^2

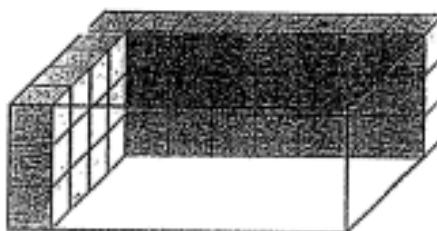
- 7 ABCD is a square. QT and BD are straight lines.



Which of the following is not true?

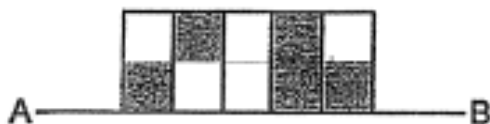
- (1) $QT \parallel BC$
- (2) $QT \perp DC$
- (3) $\angle DUT = \angle UDT$
- (4) $\angle ADU + \angle QUB = 180^\circ$

- 8 A rectangular container is partially filled with 1-cm cubes as shown below. What is the volume of the container?

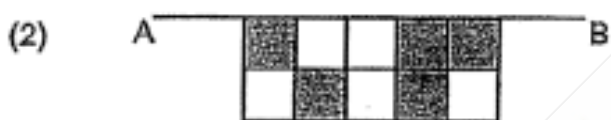
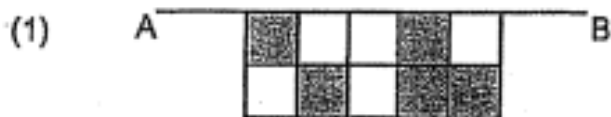


- (1) 84 cm^3
- (2) 96 cm^3
- (3) 105 cm^3
- (4) 120 cm^3

9



The top half of a symmetric figure is shown above. AB is the line of symmetry. Which one of the following completes the symmetric figure?



- 10 Kelly was facing south-west. She turned 315° anti-clockwise. In which direction is she facing now?

- (1) North
- (2) South
- (3) East
- (4) West



11 Using all the digits 2, 5, 7 and 8, form the largest multiple of 5 between 1000 and 8000.

- (1) 7825
- (2) 7852
- (3) 8725
- (4) 8752

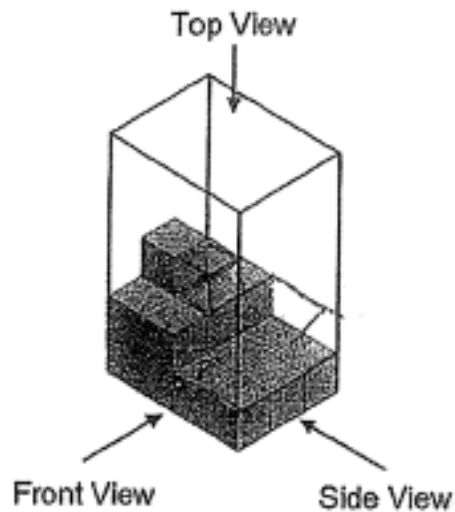
12 Su Fen's score for Mathematics improved from 50 marks to 75 marks.
What was the percentage increase in marks?

- (1) $33\frac{1}{3}\%$
- (2) 50%
- (3) $66\frac{2}{3}\%$
- (4) 150%

13 There are an equal number of students in class 6A and 6B.
The ratio of the number of boys to the number of girls in class 6A is 1 : 2.
The ratio of the number of boys to the number of girls in class 6B is 1 : 3.
Find the ratio of the number of girls in 6A to the total number of students in class 6A and 6B.

- (1) 1 : 3
- (2) 1 : 7
- (3) 2 : 3
- (4) 2 : 7

- 14 The solid below is built using 1-cm cubes and placed into a glass tank.



What is the greatest number of cubes that can be added to the solid so that the side view is not changed?

- (1) 8
- (2) 9
- (3) 10
- (4) 14

- 15 Nora and Ming baked some cookies over two days. On Monday, Nora baked 29 cookies more than Ming. On Tuesday, Nora baked another 15 cookies and Ming baked another 20. At the end of the two days, the number of cookies Nora baked was $\frac{3}{5}$ of the total number of cookies baked by the two girls. How many cookies did Nora bake on both days?

- (1) 24
- (2) 36
- (3) 48
- (4) 72

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

- 16 Christina bought 5 pens at \$2.75 each.
How much did she pay for the pens in total?



Ans: \$ _____

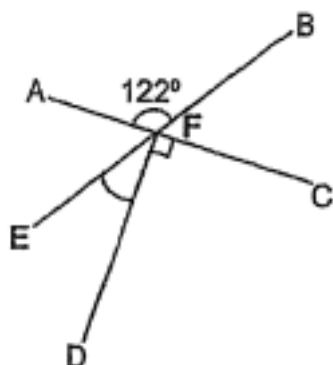
- 17 The mass of a tennis ball when rounded to the nearest tenth is 58.0 g.
What is the smallest possible mass of the tennis ball?

Ans: _____ g

- 18 Find the value of $5 \times (38 - 14) + 6 + 27$.

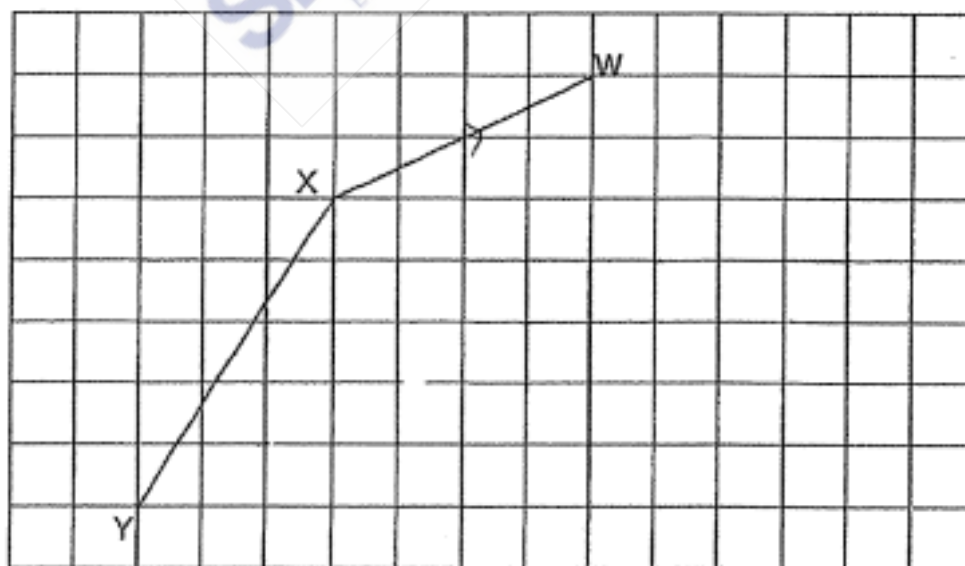
Ans: _____

- 19 In the figure, AC and BE are straight lines. Find $\angle EFD$.



Ans: _____°

- 20 In the square grid, WX and XY are two sides of a trapezium WXYZ. The ratio of the length of XW to the length of YZ is 2 : 5. Complete the trapezium by drawing the other two sides in the grid below.



Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 Muffins are sold in boxes of 1, 4 or 6. Tammy bought 45 muffins.
What is the least number of boxes that Tammy bought?

Ans: _____

- 22 A train left Town A at 10.30 p.m. and reached Town B at 8.25 a.m. the next day. How long did the journey take? Give your answer in hours and minutes.

Ans: _____ h _____ min

- 23 Mr Wong bought 576 roses. The ratio of the number of red roses to the number of white roses was 3 : 2. The ratio of the number of white roses to the number of pink roses was 1 : 2. How many pink roses did Mr Wong buy?

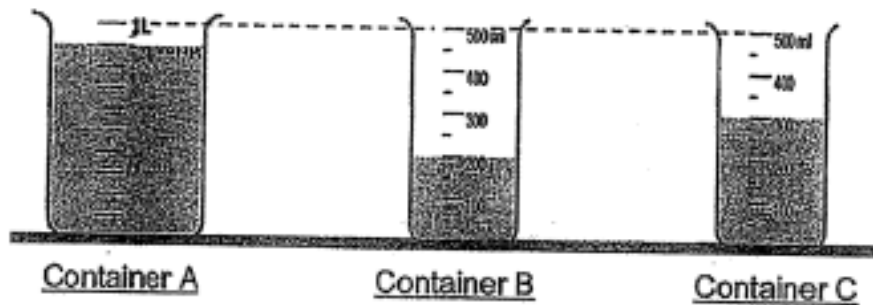
Ans: _____

- 24 A rectangular container measuring 60 cm long, 20 cm wide and 30 cm high is filled with water to a height of 12 cm. How much more water is needed to fill the container completely?

Ans: _____ cm^3

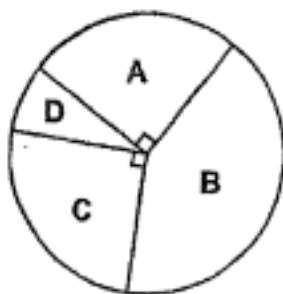
- 25 Karen poured water from Container A to Containers B and C so that the height of the water in the 3 containers became the same.

Find the volume of water left in Container A.



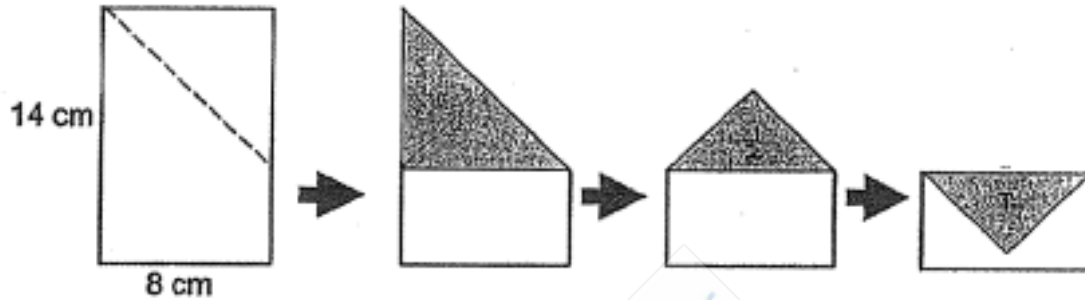
Ans: _____ ml

- 26 The pie chart shows the grades A, B, C and D obtained by some pupils in a Mathematics test. $\frac{2}{5}$ of the pupils obtained grade B. What fraction of the pupils obtained grade D?



Ans: _____

- 27 Joyce has a rectangular piece of paper, 8 cm by 14 cm. It is white on one side and coloured on the other side. She folds the paper along the dotted lines as shown below. Express the area of the coloured triangle T as a fraction of the area of the whole piece of paper. Give your answer in the simplest form.

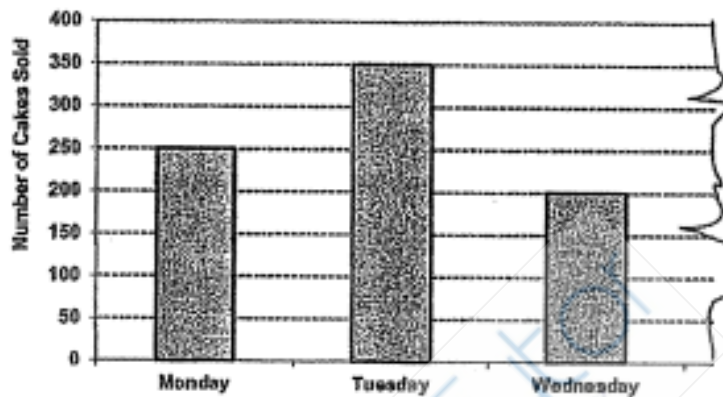


Ans: _____

- 28 Joanne spent $\frac{1}{4}$ of her money on a watch and $\frac{1}{6}$ of her remaining money on a pair of shoes. She has \$125.50 left. How much did the watch cost?

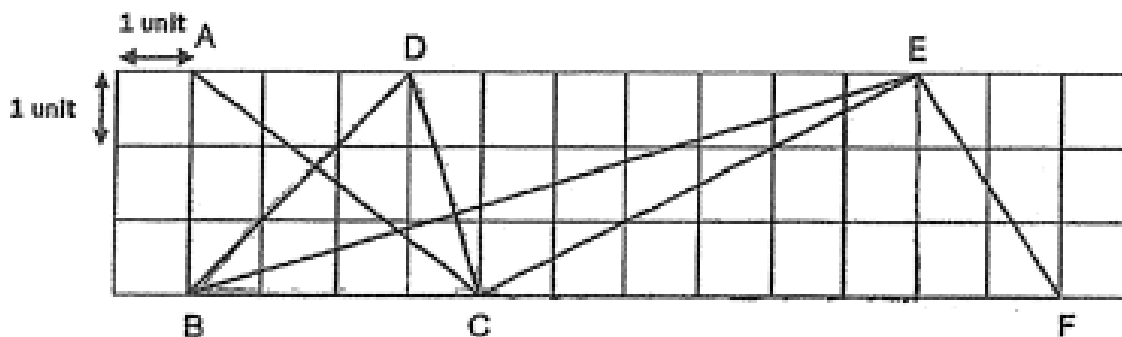
Ans: \$ _____

- 29 The bar graph shows the number of cakes sold in a shop from Monday to Friday. Part of the bar graph was accidentally torn off. The average number of cakes sold from Monday to Tuesday was the same as the average number of cakes sold from Wednesday to Friday. What is the total number of cakes sold on Thursday and Friday?



Ans: _____

30 The diagram below shows four different triangles ABC, BCD, BCE and BFE.



Each statement below is either true, false, or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

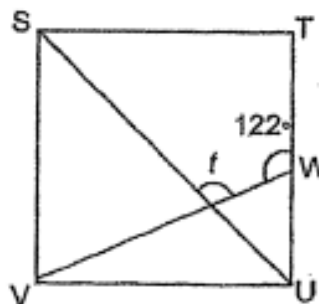
Statement	True	False	Not possible to tell
(a) The area of ABC is 6 square units.			
(b) Twice the area of BCD is 9 square units.			
(c) The ratio of the area of BCE to the area of BFE is 1 : 3.			

Questions 1 to 5 carry 2 mark each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 Kristen and Lauren had 85 stickers altogether. After Kristen gave Lauren 18 stickers, she had 21 stickers more than Lauren. How many stickers did Kristen have at first?

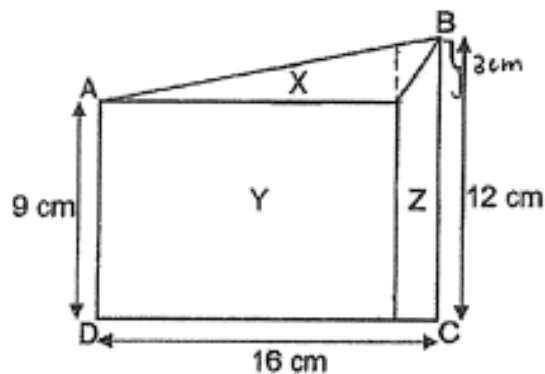
Ans: _____

- 2 STUV is a square. SU and VW are straight lines. $\angle VWT = 122^\circ$. Find $\angle f$.



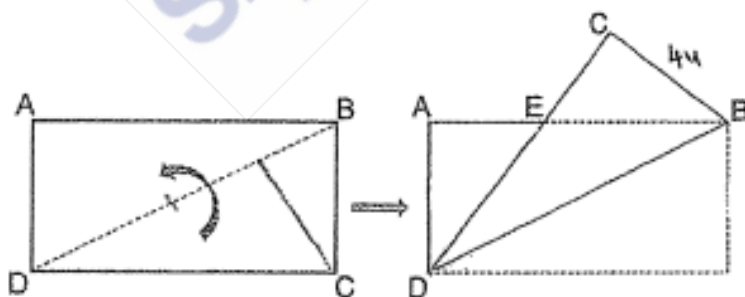
Ans: _____°

- 13 ABCD is made up of a triangle X, a rectangle Y and a trapezium Z as shown below. DC is a straight line. Find the area of ABCD.



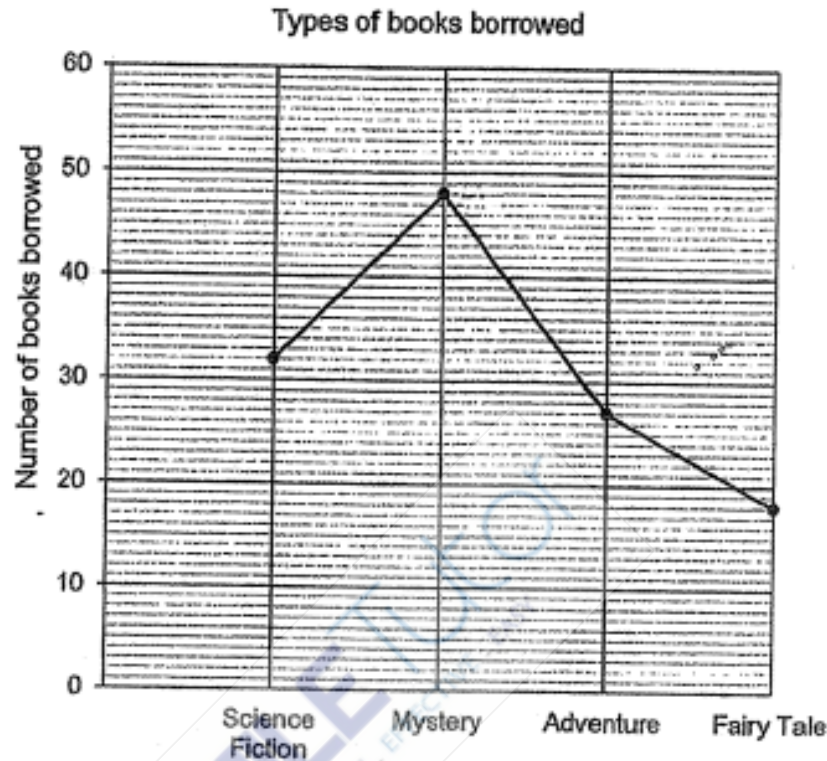
Ans: _____ cm²

- 4 A rectangular piece of paper was folded along its diagonal BD as shown below. DE = EB. The ratio of the AE : BE : BC is 3 : 5 : 4. Find the ratio of the area of triangle EBD to the area of triangle BCE.



Ans: _____

- 5 The graph below shows the types of books borrowed by 80 students.



Each student borrowed either 1 or 2 story books.
 How many students borrowed 2 books?

Ans: _____

For questions to 6 to 17, show your workings clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

- 6 In the morning, there were 750 children at a funfair. 30% of them were girls and the rest were boys. In the afternoon, some more girls joined the funfair and the percentage of girls increased to 40% of the total number of people. How many girls joined the funfair in the afternoon?

Ans: _____ [3]

- 7 Mr Tang bought some apples and oranges. Each apple cost \$0.50 and each orange cost \$0.40. The ratio of the number of apples bought to number of oranges bought was 5 : 2. Mr Tang spent \$23.10 on all the fruits. How many apples did he buy?



Ans: _____ [3]

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- 8 Mrs Tan had 47 kg of soap mix. $\frac{5}{8}$ kg of soap mix was needed to make each soap bar. Mrs Tan made as many soap bars as she could. How much soap mix did she have left? Give your answer as a fraction in the simplest form.

Ans: _____ [3]

- 9 The table below shows the number of pens sold in a bookstore over a period of 3 months.

Month	March	April	May
Number of pens sold	103	94	97

- (a) Find the average number of pens sold from March to May.

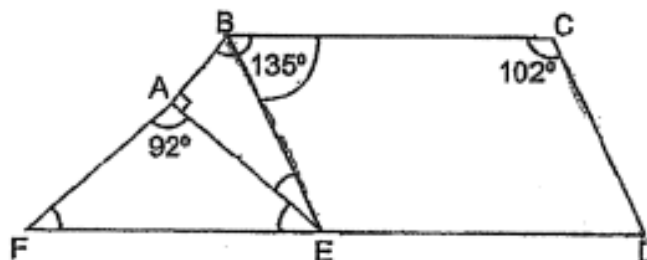
Ans: (a) _____ [1]

- (b) The average number of pens sold from March to July was 15 more than the average number of pens sold from March to May. Write down one possible pair of values for the number of pens sold in June and July.

Ans: (b) _____ and _____ [2]

10 AEF is an isosceles triangle, where $AE = AF$. $\angle ABC = 135^\circ$.

ABE is a right-angled triangle and BCDE is a parallelogram. Find $\angle AEB$.



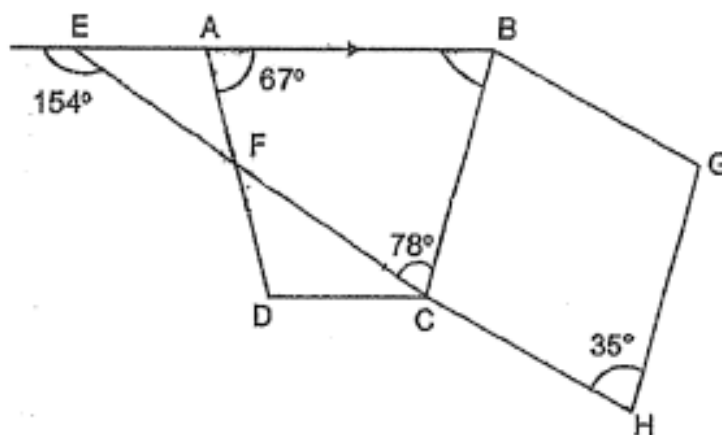
Ans: _____ [3]

- 11 There were 380 red and blue marbles in a jar. After $\frac{5}{8}$ of the red marbles and $\frac{1}{4}$ of the blue marbles were taken out, there were 177 marbles left in the jar. How many red marbles were there in the jar at first?



Ans: _____ [4]

- 12 ABCD is a trapezium and BGHC is a rhombus. BE, AD and CE are straight lines.



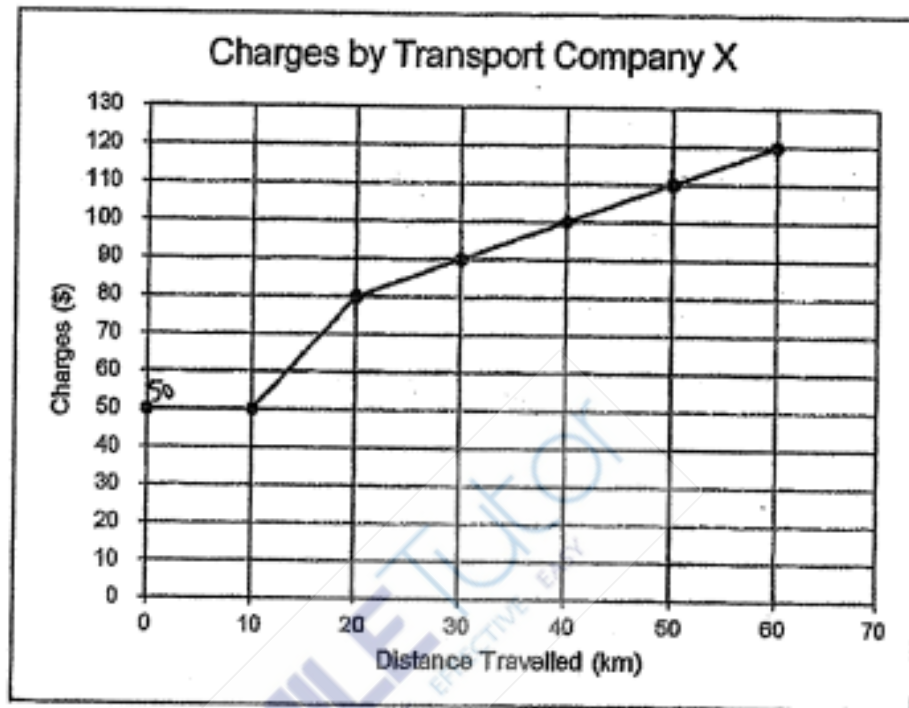
- (a) Find $\angle ABG$.

Ans: (a) _____ [2]

- (b) Find $\angle EFD$.

Ans: (b) _____ [2]

- 13 The graph below shows the cost of hiring a mini-bus from a transport company.



- (a) The distance from Town A to Town B is 6.2 km. What is the cost of hiring the bus to travel from Town A to Town B?

Ans: (a) _____ [1]

- (b) Mr Tan hired the bus to travel from Town C to Town D and back to Town C using the same route. He paid \$90. What is the distance from Town C to Town D?

Ans: (b) _____ [2]

- (c) How much does the company charge for every kilometre of travel after the first 20 km?

Ans: (c) _____ [1]

- 14** The table below shows how a set of numbered cards is distributed among 4 boys.

Alan	Brian	Chris	Daniel
1	2	3	4
8	7	6	5
9	10	11	12
16	15	14	13
17			

- (a) Who will receive the 29th card?

Ans: (a) _____ [1]

- (b) All the cards in the set are distributed. Each boy receives an equal number of cards. The numbers on the cards for each boy add up to 132. How many cards are there altogether?

Ans: (b) _____ [3]

15 Joanna paid \$126 for a bag after a discount of 25%.

(a) What was the price of the bag before discount?

Ans: (a) _____ [1]

(b) She paid a discounted price of \$108.80 for a pair of shoes.
The total discount for the pair of shoes and the bag was \$61.20.
What was the percentage discount given for the pair of shoes?

Ans: (b) _____ [3]

- 16** Ben had some red, blue and yellow cards. He had 156 more blue cards than red cards and $\frac{2}{3}$ as many yellow cards as red cards. He gave away $\frac{1}{3}$ of his red cards, $\frac{5}{6}$ of his blue cards and 50% of his yellow cards. In the end, he had 250 cards left.

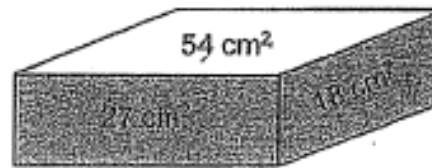
(a) How many cards did Ben have at first?

Ans: (a) _____ [3]

(b) How many blue cards did Ben give away?

Ans: (b) _____ [2]

- 17 An open rectangular box is shown below.



- (a) The outside of the box including its base is painted. Find the painted area.

Ans: (a) _____ [1]

- (b) The box is packed full with 1-cm cubes.
(i) What is the least number of cubes used?

Ans: (b)(i) _____ [2]

- (ii) How many cubes touch the inside of the box?

Ans: (b)(ii) _____ [2]

END OF PAPER

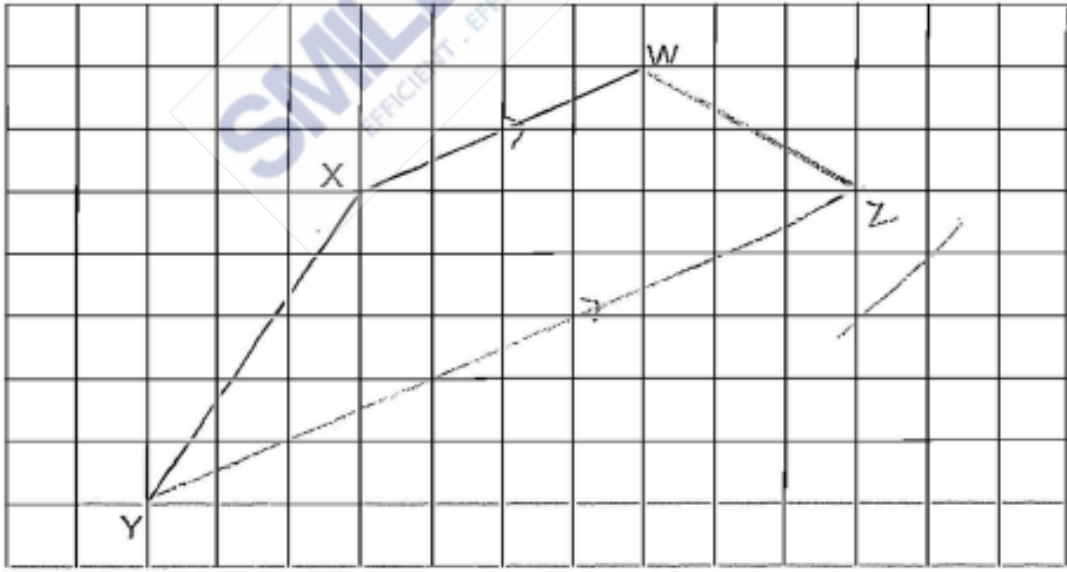
ANSWER SHEET

PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	1	3	2	2	4	4	2	4

Q 11	Q12	Q13	Q14	Q15
1	2	1	2	4

PAPER 1 BOOKLET B

Q16)	$2.75 \times 5 = \$13.75$
Q17)	57.5 g
Q18)	$5 \times 24 \div 6 + 27$ $= 120 \div 6 + 27$ $= 20 + 27 = 47$
Q19)	32°
Q20)	

Q21)	$6B : 45 - 36 = 9$ $3B : \frac{9}{4} = 2R1$ $= 9 \text{ box}$									
Q22)	$1h + 1h + 7h + 30\text{min} + 25\text{MIN}$ $= 9H 55 \text{ min}$									
Q23)	$9u = 576$ $1u = \frac{576}{9} = 64$ $4u = 64 \times 4 = 256$									
Q24)	Volume $\rightarrow 60 \times 20 \times 30 = 1200 \times 30 = 3600$ Volume now $\rightarrow 60 \times 20 \times 12 = 1200 \times 12 = 14400$ Needed $\rightarrow 3600 - 14400 = 21600 \text{ cm}^3$									
Q25)	$900 - 700 = 200$ Pour 100ml to B \rightarrow B has 300ml (same as C) <table><tr><td>A</td><td>B</td><td>C</td></tr><tr><td>800</td><td>300</td><td>300</td></tr><tr><td>700</td><td>350</td><td>350</td></tr></table> <p>Same level ANS: 700ml</p>	A	B	C	800	300	300	700	350	350
A	B	C								
800	300	300								
700	350	350								
Q26)	$A + C = \frac{1}{4} + \frac{1}{4} = \frac{1}{2}$ $\frac{1}{2} + \frac{2}{5} = \frac{9}{10}$ $1 - \frac{9}{10} = \frac{1}{10}$									
Q27)	$14 \times 8 \times \frac{1}{2} = 56$ $56 \times \frac{1}{2} = 28$ $\frac{28}{14 \times 8} = \frac{1}{4}$									
Q28)	$5u = 125.50$ $1u = \frac{125.50}{5} = 25.10$ $2u = 25.10 \times 2 = \$50.20$									

Q29)	<p>Average of M + T $\rightarrow \frac{350+250}{2} = 300$</p> <p>Three days (W + TH + F) $\rightarrow 300 \times 3 = 900$</p> <p>TH + F $\rightarrow 900 - 200 = 700$</p>
Q30)	<p>a) True</p> <p>b) False</p> <p>c) True</p>

PAPER 2

Q1)	<p>$2u = 85 - 18 - 21 + 8 = 28$</p> <p>$1u = \frac{28}{2} = 14$</p> <p>$K \rightarrow 14 + 18 + 21 + 18 = 71$</p>
Q2)	$\angle T = 180 - 77 = 103^\circ$
Q3)	<p>$9 \times 16 = 144$</p> <p>$144 + 24 = 168 \text{ cm}^2$</p>
Q4)	$5 : 3$
Q5)	<p>$32 + 18 + 27 + 48 = 125$</p> <p>$125 - 80 = 45$</p>
Q6)	<p>$420u = 525$</p> <p>$1u = \frac{525}{420} = 1.25$</p> <p>$280u = 280 \times 1.25 = 350$</p> <p>$350 - 225 = 125$</p>
Q7)	<p>$3.3u = 23.10$</p> <p>$1u = \frac{23.10}{3.3} = 7$</p> <p>$5u = 7 \times 5 = 35$</p>
Q8)	<p>Most number $\rightarrow 47 \div \frac{5}{8} = 75.2$</p> <p>Used $\rightarrow 75 \times \frac{5}{8} = 46\frac{7}{8}$</p>

	Left $\rightarrow 47 - 46\frac{7}{8} = \frac{1}{8}$ kg
Q9)	a) Total $\rightarrow 103 = 94 + 97 = 294$ Average $\rightarrow \frac{294}{3} = 98$ b) Average in M \rightarrow July $\rightarrow 98 + 15 = 113$ Total in 5 months $\rightarrow 113 \times 5 = 565$ June + July $\rightarrow 565 - 103 - 94 - 97 = 271$ ANS : 100 and 271
Q10)	$\frac{180-92}{2} = 44^\circ$ $\angle EBC = 180^\circ - 102^\circ = 78^\circ$ $135^\circ - 78^\circ = 57^\circ$ $\angle AEB = 90^\circ - 57^\circ = 33^\circ$
Q11)	$\frac{12}{8} R = 432$ $R = 288$
Q12)	a) $\angle ABG = 76 + 35 = 111^\circ$ b) $\angle EFD = 360 - 139 - 41 - 41 = 139^\circ$
Q13)	a) \$50 b) 15km c) \$1
Q14)	a) $29 \div 4 = 7$ (Daniel) b) $8 \times 4 = 32$
Q15)	a) $75\% \rightarrow 126$ $100\% \rightarrow \frac{126}{75} \times 100 = \168 b) Discount for bag $\rightarrow 25\% \rightarrow \frac{126}{75} \times 25 = 42$ Discount for first $\rightarrow 61.20 - 42 = 19.20$ Shoes at first $\rightarrow 108.80 + 129.20 = 128$ $\frac{19.2}{128} \times 100\% = 15\%$
Q16)	a) $7u + 26 = 250$ $7u = 224$ $1u = 32$ $6u + 6u + 4u + 156$ $= 16u + 156$ $= 16 \times 32 + 156 = 668$

	b) $5u + 130 + 32 \times 5 + 130 = 290$
Q17)	a) $27 + 27 + 18 + 18 + 54 = 144\text{cm}^2$ b) i) $9 \times 3 \times 6 = 162$ ii) $7 \times 4 \times 2 = 56$ $162 - 56 = 106$



HENRY PARK PRIMARY SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.

For each question, four options are given. One of them is the correct answer.

Make your choice (1, 2, 3 or 4) and shade your answer in the Optical Answer Sheet.

(20 marks)

- 1 The height of Mount Kraig is 350 000 m when rounded to the nearest thousand metres. Which of the following could be the actual height of Mount Kraig?

- (1) 349 050 m
- (2) 349 450 m
- (3) 350 050 m
- (4) 350 950 m

- 2 What is the value of $90 \div 4500$?

- (1) 0.002
- (2) 0.02
- (3) 5
- (4) 50

- 3 Arrange the following fractions from the largest to the smallest.

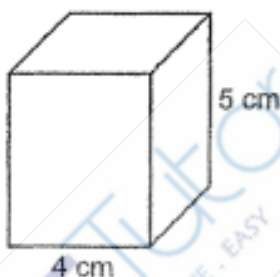
$$\frac{2}{11}, \frac{3}{10}, \frac{1}{5}$$

- (1) $\frac{1}{5}, \frac{2}{11}, \frac{3}{10}$
- (2) $\frac{2}{11}, \frac{1}{5}, \frac{3}{10}$
- (3) $\frac{3}{10}, \frac{2}{11}, \frac{1}{5}$
- (4) $\frac{3}{10}, \frac{1}{5}, \frac{2}{11}$

4 Express 4080 g in kg.

- (1) 4.008 kg
- (2) 4.08 kg
- (3) 40.08 kg
- (4) 40.8 kg

5 A cuboid of height 5 cm has a square base of side 4 cm. What is its volume?

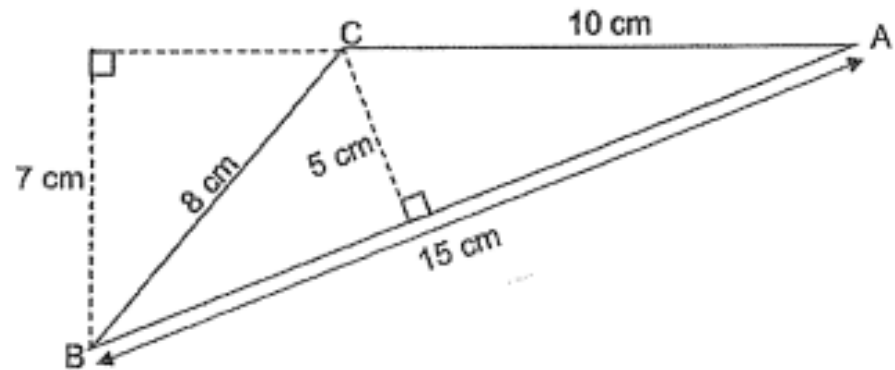


- (1) 20 cm³
- (2) 80 cm³
- (3) 100 cm³
- (4) 125 cm³

6 Mrs Ling was in school at 6.40 a.m. yesterday. She stayed in school for 9 hours and 40 minutes. What time did she leave the school yesterday?

- (1) 15 40
- (2) 15 20
- (3) 16 20
- (4) 16 40

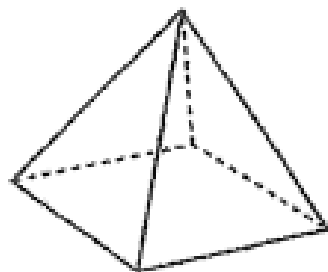
- 7 Given that AC is the base of the triangle ABC, what is the height of the triangle?



- (1) 5 cm
 (2) 7 cm
 (3) 8 cm
 (4) 15 cm
- 8 Express 0.003 as a percentage.

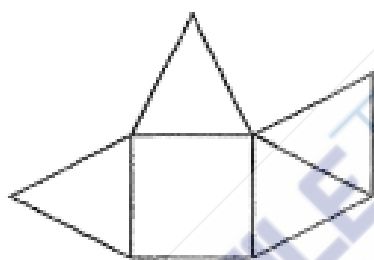
- (1) 0.03%
 (2) 0.3%
 (3) 3%
 (4) 30%

- 9 The figure below shows a pyramid.

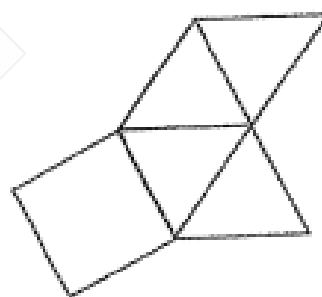


Which of the following is **not** a net of the pyramid?

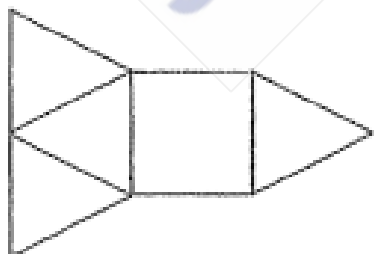
(1)



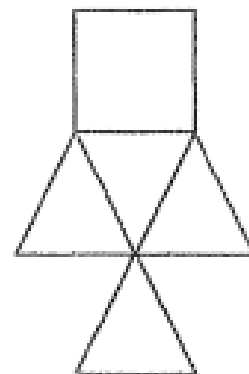
(2)



(3)

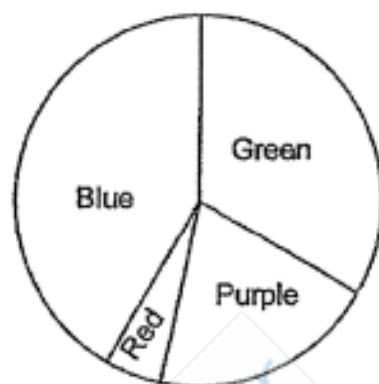


(4)



Use the information below to answer questions 10 and 11.

The pie chart below shows the number of different coloured pens a bookshop sold. $\frac{1}{3}$ of the pens sold were green. $\frac{1}{4}$ of the pens sold were either purple or red and the rest were blue. The bookshop sold 4 times as many purple pens as red pens.



10 What fraction of the pens sold were blue?

- (1) $\frac{1}{3}$
- (2) $\frac{5}{12}$
- (3) $\frac{11}{30}$
- (4) $\frac{17}{48}$

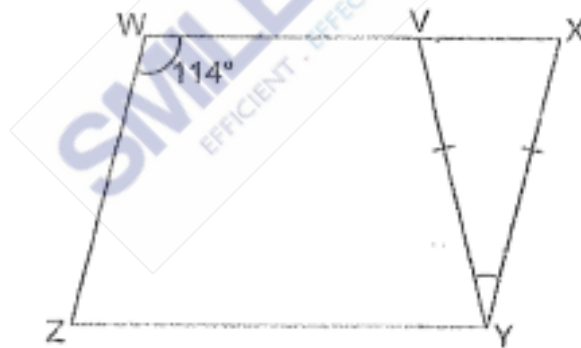
11 Given that the shop sold 20 green pens, how many red pens did it sell?

- (1) 12
- (2) 15
- (3) 3
- (4) 25

- 12 Bryan kept his black and white caps in two boxes. The number of black caps and white caps in the first box was in the ratio 2 : 1. The number of black caps and white caps in the second box was in the ratio 5 : 7. The two boxes had the same number of caps. What fraction of Bryan's caps were white?

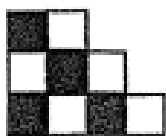
- (1) $\frac{1}{3}$
- (2) $\frac{7}{12}$
- (3) $\frac{8}{15}$
- (4) $\frac{11}{24}$

- 13 WXYZ is a parallelogram. Find $\angle XYV$.

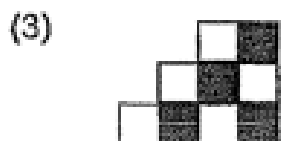
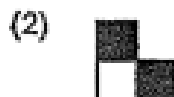
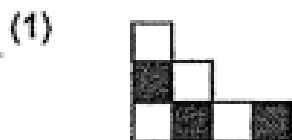


- (1) 57°
- (2) 66°
- (3) 48°
- (4) 33°

- 14 Zi Xuan used identical black and white squares to form a symmetrical pattern on a large square board. The figure below shows part of the square board.



Which of the following pieces will complete the pattern on the square board?



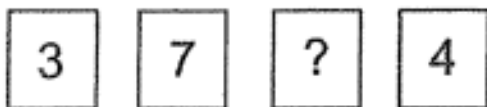
- 15 Joan, Siti and Xiuli had 60 beads each. Joan gave $\frac{2}{5}$ of her beads to Xiuli. Siti gave some of her beads to Xiuli. Xiuli had 3 times the total of the remaining beads Joan and Siti had. How many beads did Siti give Xiuli?

- (1) 20
 (2) 24
 (3) 51
 (4) 75

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided.
 For questions which require units, give your answers in the units stated.

(5 marks)

- 16 Each of the four cards shown below represents a 1-digit number.



The sum of all the digits of the four cards is a multiple of 8. What is the missing digit in the card shown above?

Ans: _____

- 17



Usual price: 95¢ per apple

SPECIAL OFFER:

8 apples for
\$6.00

Mrs Tan bought 8 apples during the special offer. Without the special offer, how much more would she have to pay for the 8 apples?

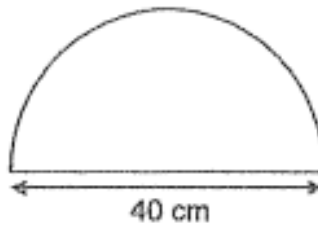
Ans: \$ _____

- 18 $3 : 12 = \boxed{?} : 16$

What is the missing number in the box?

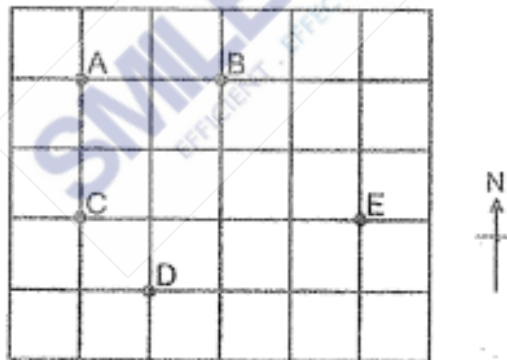
Ans: _____

- 19 The semicircle below has a diameter of 40 cm. What is the area of the semicircle? Take $\pi = 3.14$



Ans: _____ cm²

- 20 The square grid below shows the positions of points A, B, C, D and E.



Point (a) is south-west of point (b).

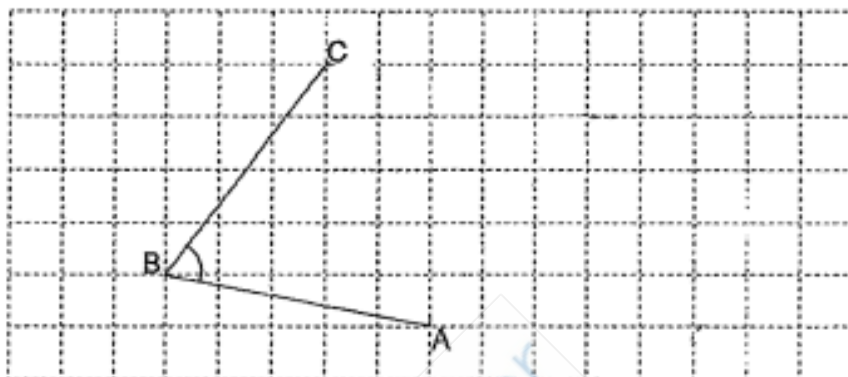
Ans: (a) _____

(b) _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(20 marks)

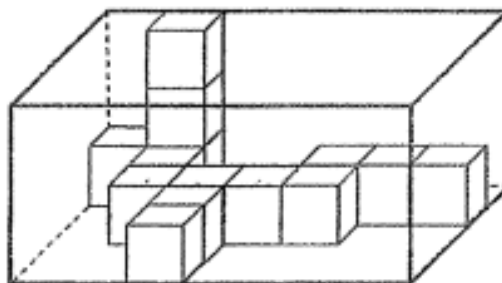
- 21 In the square grid below, AB and BC are straight lines.



- (a) Measure and write down the size of $\angle ABC$.
- (b) AB and BC form two sides of a parallelogram ABCD. Complete the drawing of the parallelogram ABCD within the grid and label point D. [1]

Ans: (a) _____ ° [1]

- 22 The figure shows a rectangular box partly filled with 1-cm cubes. What is the volume of the rectangular box?



Ans: _____ cm^3

- 23 Jacky had some stickers. He gave $\frac{1}{6}$ of the stickers each to his two sisters. He put aside $\frac{2}{3}$ of his remaining stickers to be shared equally among his brothers. Each of his brothers received $\frac{1}{9}$ of the stickers. How many brothers did Jacky have?

Ans: _____

- 24 What is the percentage discount for the shirt shown?



Ans: _____ %

- 25 Mr Lee drove for 6 hours from City A to City B. In the first two hours, he drove at an average speed of 75 km/h. For the rest of the journey, he drove at an average speed of 60 km/h. What was his average speed for the whole journey?

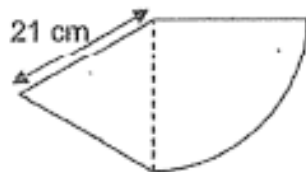


Ans: _____ km/h

- 26 John had $24k$ marbles. Kelvin had 16 fewer marbles than John while Mike had half as many marbles as John. How many marbles do the 3 boys have in total? Give your answer in terms of k in the simplest form.

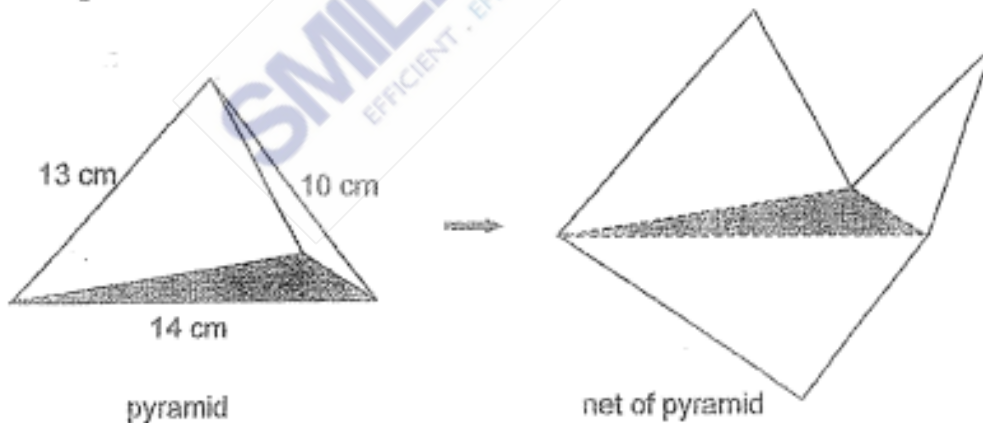
Ans: _____

- 27 The figure below is made up of a quarter circle and an equilateral triangle.
 Find the perimeter of the figure. Take $\pi = \frac{22}{7}$



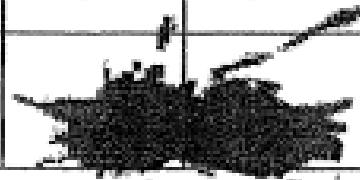
Ans: _____ cm

- 28 A pyramid and its net are shown below. The base of the pyramid in both diagrams are shaded. Find the perimeter of the net of the pyramid.



Ans: _____ cm

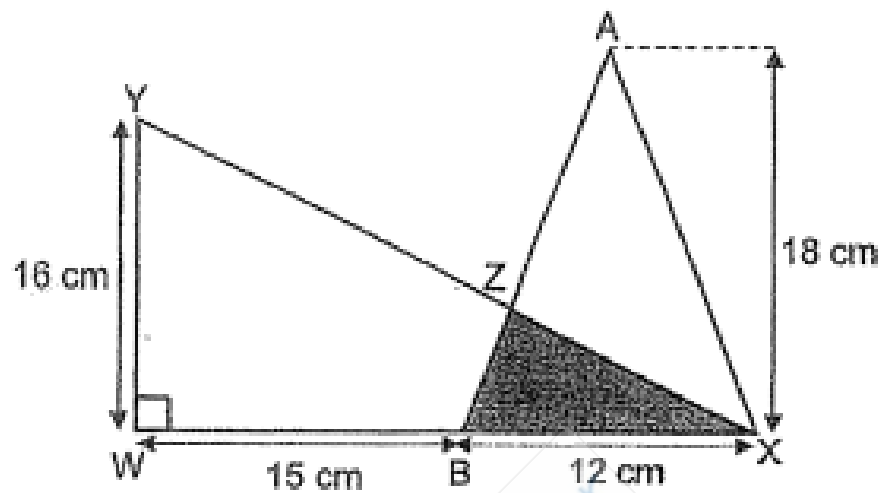
- 29** The table below shows the different amounts of money donated by a group of students. Part of the table is covered by an ink blot. $\frac{3}{4}$ of the group of students donated at least \$5.

Amount of money donated	\$0	\$2	\$5	\$8	\$10
Number of students	35	28	38		

Each statement below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

Statement	True	False	Not possible to tell
Every student in the group donated some money.			
The group consisted of 252 students.			
The number of students who donated \$10 was the greatest.			

- 30** The figure below is made up of triangles WXY and ABX . The total unshaded area of the figure is 180 cm^2 . Find the shaded area BXZ .



Ans: _____ cm^2

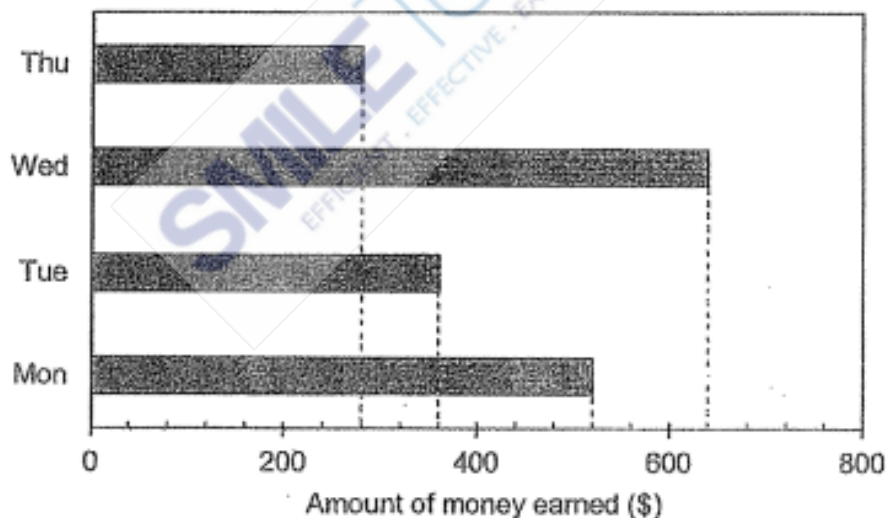
Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

- 1 Ahmad had a sum of money. He could only buy 10 notebooks with all the money he had. He decided to buy 6 notebooks and 4 pens. He had \$2.40 left. Each pen cost \$0.80. How much money did Ahmad have at first?

Ans: \$ _____

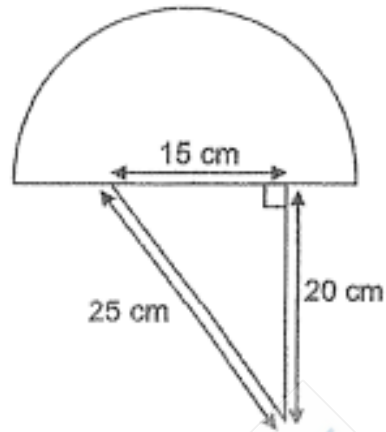
- 2 The bar graph below shows the amount of money ABC clothing store earned from Monday to Thursday.



What is the average amount of money ABC clothing store earned from Monday to Thursday?

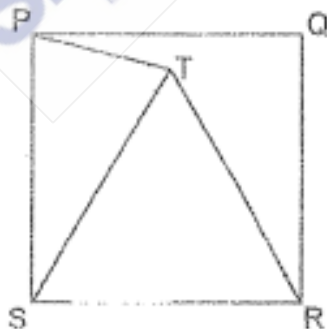
Ans: \$ _____

- 3 The figure below shows a right-angled triangle and a semicircle of radius 14 cm. Use the calculator value of π to find the perimeter of the figure. Round your answer to 2 decimal places.



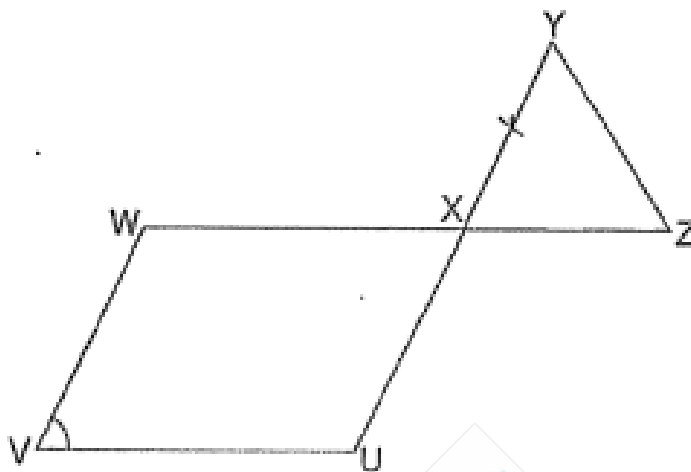
Ans: _____ cm

- 4 PQRS is a square, STR is an equilateral triangle. Find the value of $\angle QPT$.



Ans: _____ °

- 5 In the figure below, $UVWX$ is a parallelogram and XYZ is an isosceles triangle where $XY = XZ$. UXY and WXZ are straight lines and the sum of $\angle YZX$ and $\angle XWV$ is 147° . Find $\angle UVW$.



Ans: _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in the brackets [] at the end of each question or part-question.

(45 marks)

-
- 6 Jane and Siti had a number of beads. Jane had 432 more beads than Siti. After Jane gave away $\frac{1}{4}$ of her beads and Siti gave away $\frac{5}{8}$ of her beads, Jane had 441 more beads than Siti. How many beads did Jane have at first?

Ans: _____ [3]

- 7 At a paint shop, there were some identical containers. 70% of the containers were completely filled with paint. The remaining 120 containers were empty. The total volume of paint in the containers was 1400 l. What was the volume of paint in one container? Give your answer in litres.



Ans: _____ [3]

- 8 Jen and Grace took part in a race and both of them started running from the same point at the same time. After 35 min, Jen completed the race, but Grace had only run $\frac{5}{7}$ of the distance. Given that both girls did not change their speeds throughout the race and that Jen ran at a constant speed of 36 m/min faster than Grace, find Grace's average speed for the first 35 min.



Ans: _____ [3]

- 9 The table below shows the number of plastic bottles collected by four classes for recycling.

Class	Number of plastic bottles
6A	11
6B	$8m$
6C	$40 - 3m$
6D	?

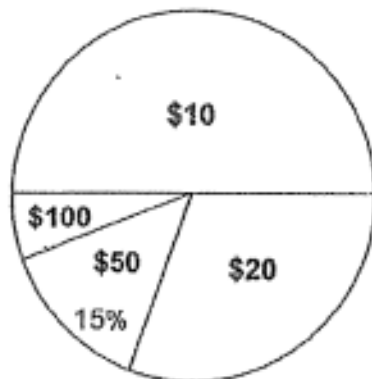
- (a) Find the total number of plastic bottles 6A, 6B and 6C collected. Express your answer in terms of m in the simplest form.

Ans: (a) _____ [1]

- (b) The total number of plastic bottles collected by the four classes is 209. Given $m = 13$, find the number of plastic bottles collected by 6D.

Ans: (b) _____ [2]

- 10 The pie chart below shows the number of \$10, \$20, \$50 and \$100-tickets sold by a concert organiser. $\frac{1}{2}$ of the number of tickets sold were \$10-tickets. $\frac{3}{10}$ of the number of tickets sold were \$20-tickets.



- (a) What fraction of the tickets sold were \$100-tickets?
Express your answer in the simplest form.

Ans: (a) _____ [1]

- (b) A total of \$10 810 was collected from the sale of all the tickets.
How much was collected from the sale of \$10-tickets?

Ans: (b) _____ [3]

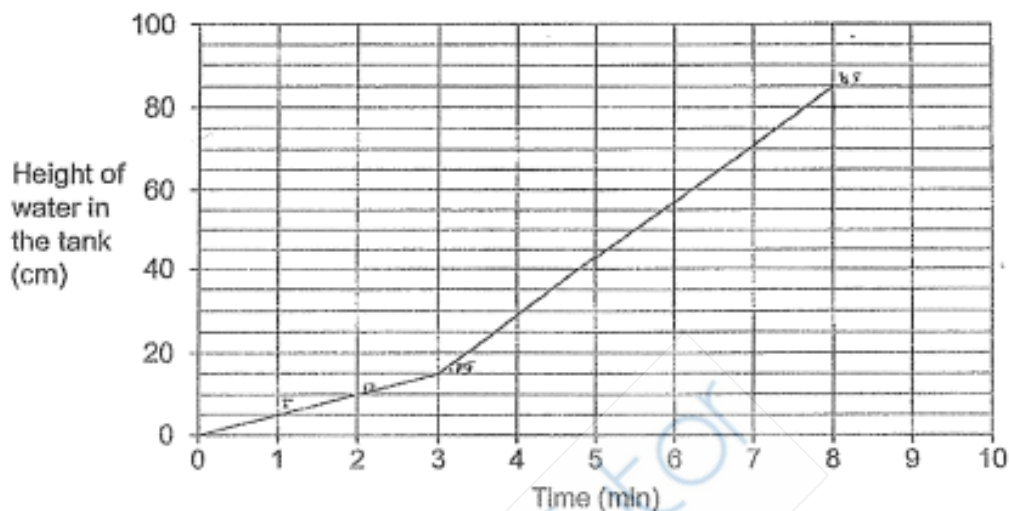
- 11 A money box contained some money at first. A took $\frac{1}{2}$ the amount of money and another \$1500 from the box. After that, B took $\frac{1}{4}$ of the remaining amount of money and another \$850 from the box. In the end, C took the rest of the money left in the box. Given that C took \$1400, find the amount of money in the box at first.



Ans: _____ [4]

- 12 Sam wanted to fill an empty tank measuring 125 cm long and 80 cm wide with water. He turned on Tap A first and after 3 minutes, he turned on Tap B. Both taps were turned off at the same time when the tank was filled to the brim without overflowing.

The line graph shows the amount of water in the tank over 10 minutes.



- (a) Find the volume of the tank.

Ans: (a) _____ [1]

- (b) In one minute, how many litres of water flowed from Tap B?

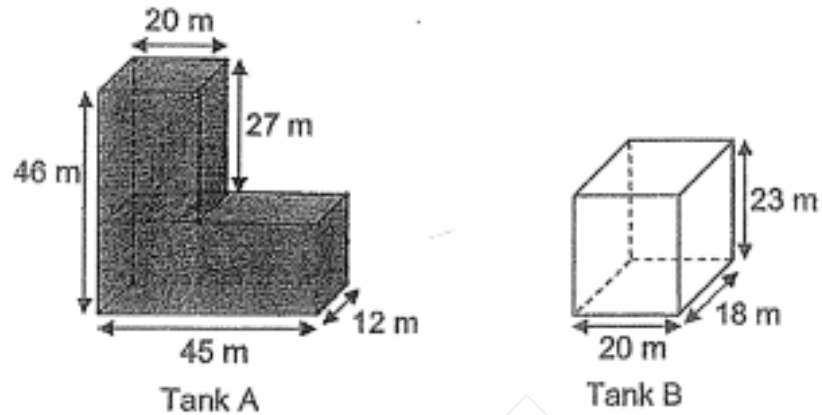
Ans: (b) _____ [3]

- 13 Last year, the ratio of the number of men to the number of women who signed up for a marathon was 5 : 4. This year, the number of men who signed up for the marathon increased by 30% and the number of women who signed up for the marathon decreased by 50%. A total of 4913 men and women signed up for the marathon this year. What is difference between the total number of people who signed up for the marathon in the two years?



Ans: _____ [3]

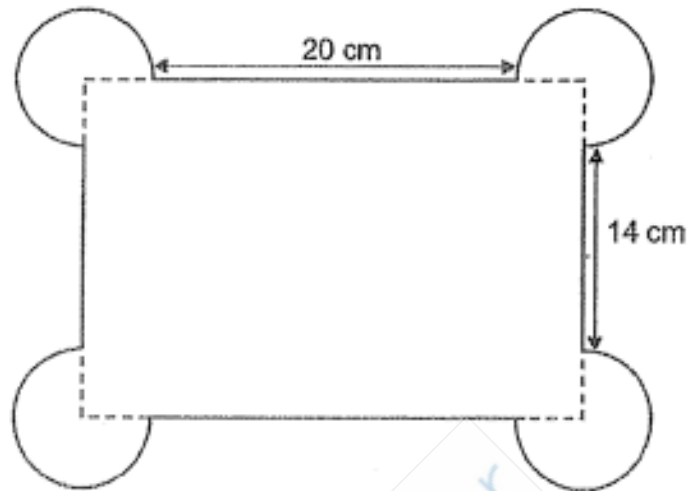
- 14 Two tanks, A and B, are shown below. Tank A was filled to the brim with water. Water was transferred from Tank A to Tank B until the height of the water level in both tanks are the same. What is the new height of water level in each tank?



Ans: _____ [3]

15

The figure below shows a rectangle with 4 identical three-quarter circles. The length and breadth of the rectangle is in the ratio 13 : 10. Taking $\pi = 3.14$,



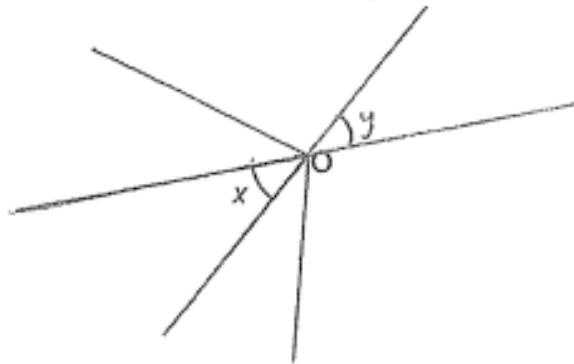
- (a) find the perimeter of the figure.

Ans: (a) _____ [3]

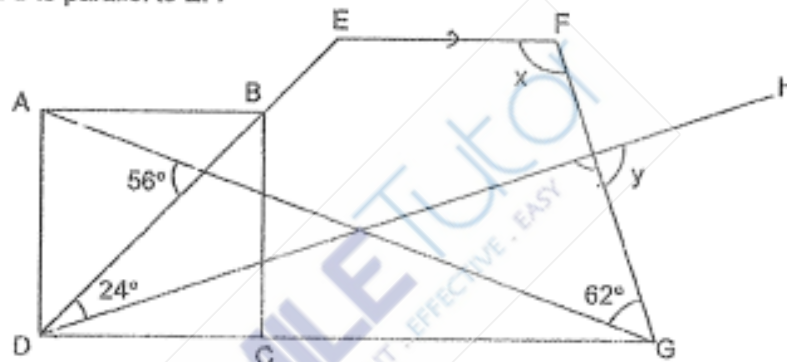
- (b) find area of the figure.

Ans: (b) _____ [2]

- 16 (a) The figure below shows angles at a point O. Without using a protractor, draw another angle at O which is the same size as $\angle x$ in the figure below. Label the angle as y . [1]



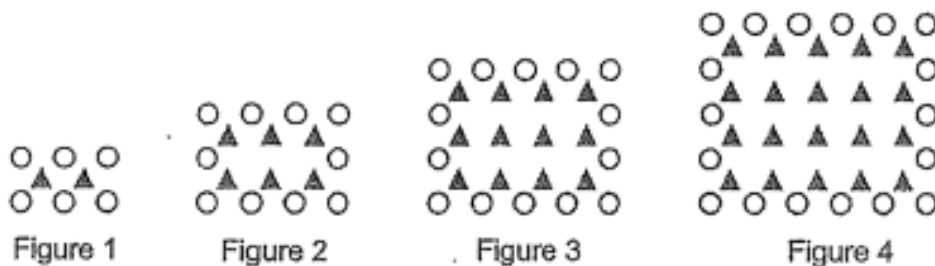
- (b) ABCD is a square and DEFG is a trapezium. AG and DH are straight lines. DG is parallel to EF.



- (i) Find $\angle x$.

Ans: (ii) _____ [2]

- 17 Jamina uses circles and triangles to form figures that follow a pattern as shown below.



- (a) The table shows the number of triangles and circles for the first 4 figures. Complete the table for Figure 5. [1]

Figure Number	1	2	3	4	5
Number of triangles	2	6	12	20	
Number of circles	6	10	14	18	
Total number of triangles and circles	8	16	26	38	

- (b) A figure in the pattern has 240 triangles. What is the Figure Number?

Ans: (b) _____ [2]

- (c) What is the total number of triangles and circles in Figure 100?

Ans: (c) _____ [2]


ANSWER SHEET

PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	4	2	2	3	2	2	1	2


Q 11	Q12	Q13	Q14	Q15
3	4	3	4	3

PAPER 1 BOOKLET B

Q16) 2						
Q17) \$1.60						
Q18) 4						
Q19) 628						
Q20) a)C b)B						
Q21) <div style="text-align: center;">  </div>						
Q22) 105cm ³						
Q23) 4						
Q24) 40%						
Q25) 65 km/h						
Q26) 60k – 16						
Q27) 96cm						
Q28) 66cm						
Q29) <table border="1" style="margin: 10px auto; width: 60%; border-collapse: collapse;"> <tr> <td style="width: 33%; height: 20px;"></td> <td style="width: 33%; height: 20px;"></td> <td style="width: 33%; height: 20px;"></td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> </table>						

Q30) 72 cm ²

PAPER 2

Q1)	\$14
Q2)	\$450
Q3)	101.98cm
Q4)	15°
Q5)	82°
Q6)	744
Q7)	5
Q8)	90
Q9)	a) 51 + 5m b) 93
Q10)	a) 1/20 b) \$2300
Q11)	\$9000
Q12)	a) 850 000cm ³ b) 90L
Q13)	289
Q14)	18.6 cm
Q15)	a) 124.52 cm b) 604.78cm ²
Q16)	a)  b) i) 107° ii) 94°
Q17)	a) 30 / 22 / 52 b) 15 c) 10502

NAN CHIAU PRIMARY SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.

For each question, four options are given. One of them is the correct answer.

Make your choice and shade your answer (1, 2, 3 or 4) on the Optical Answer Sheet.

(20 marks)

1 What is the value of the digit 9 in 485 093?

- (1) 9000
- (2) 900
- (3) 90
- (4) 9

2 Arrange the following numbers from the smallest to the largest.

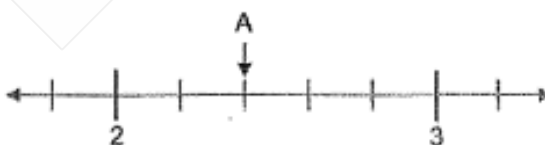
5	5.6	5.06
---	-----	------

Smallest

Largest

- | | | | | | |
|-----|------|---|------|---|------|
| (1) | 5.06 | , | 5.6 | , | 5 |
| (2) | 5.6 | , | 5.06 | , | 5 |
| (3) | 5 | , | 5.06 | , | 5.6 |
| (4) | 5 | , | 5.6 | , | 5.06 |

3 In the number line, what is the mixed number represented by A?



- (1) $2\frac{2}{5}$
- (2) $2\frac{1}{2}$
- (3) $2\frac{3}{5}$
- (4) $2\frac{2}{3}$

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4 Find the sum of 305 and 139. Round the answer to the nearest hundred.

- (1) 400
- (2) 440
- (3) 444
- (4) 500

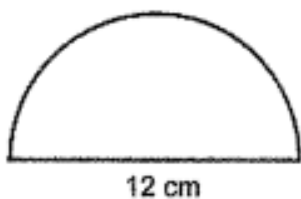
5 3 ones, 8 hundredths and 1 thousandth is _____.

- (1) 3.81
- (2) 3.801
- (3) 3.108
- (4) 3.081

6 Mrs Nathan took 30 minutes to drive from her house to her office. Her average driving speed was 90 km/h. What was the distance from her house to her office?

- (1) 27 km
- (2) 45 km
- (3) 120 km
- (4) 180 km

7 The figure shows a semicircle of diameter 12 cm.
What is the perimeter of the figure? Leave your answer in π .

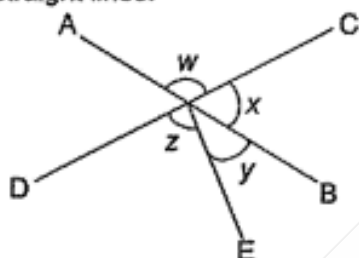


- (1) 6π cm
- (2) 18π cm
- (3) $(6\pi + 12)$ cm
- (4) $(12\pi + 12)$ cm

- 8 A school concert started at 3.40 p.m. and ended at 5.25 p.m.
How long was the concert?


- (1) 1 h 5 min
- (2) 1 h 15 min
- (3) 1 h 30 min
- (4) 1 h 45 min

- 9 AB and CD are straight lines.



Which of the following is true?

- (1) $\angle w = \angle x + \angle y$
 - (2) $\angle z = \angle w + \angle x$
 - (3) $\angle w + \angle x + \angle y = 180^\circ$
 - (4) $\angle x + \angle y + \angle z = 180^\circ$
- 10 The following table shows the time taken by four students to complete a Mathematics test. One of the recorded data is covered by an ink blot.

Name	Time taken in minutes
Anna	
Belinda	80
Colin	74
Danny	70

The average time taken by the four students was 72 minutes.
What was the time taken by Anna to complete the test?

- (1) 36
- (2) 64
- (3) 72
- (4) 74

- 11 Mary had \$350. She spent the same amount of money each day. After 5 days, she was left with $\frac{4}{5}$ of her money. How much did she spend each day?

- (1) \$14
- (2) \$15
- (3) \$56
- (4) \$70

- 12 A repeated pattern is formed using the digits 1 and 0. The first 15 numbers are shown below.

1	0	0	1	1	1	0	0	1	1	1	0	0	1	1
1 st	2 nd	3 rd													15 th

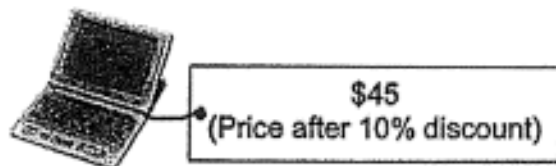
What is the sum of the first 99 numbers?

- (1) 57
- (2) 59
- (3) 60
- (4) 62

- 13 Mrs Lim has a jug which contains 5 l of water. She uses the water to fill some identical cups to the brim. The capacity of each cup is $\frac{4}{5}$ l. At most, how many such cups can she fill to the brim?

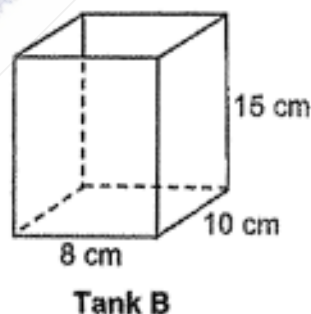
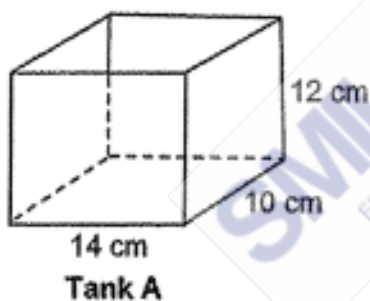
- (1) 4
- (2) 5
- (3) 6
- (4) 7

- 14 The price of an e-dictionary was \$45 after a discount of 10%. Rina was then given an additional discount of \$9. What was the total percentage discount given to Rina for the e-dictionary?



- (1) 18%
- (2) 20%
- (3) 28%
- (4) 30%

- 15 Fadilah pours the same amount of water into two empty tanks A and B shown below.



Tank A is half-filled with water. What is the height of water in Tank B?

- (1) 5.6 cm
- (2) 6 cm
- (3) 7.5 cm
- (4) 10.5 cm

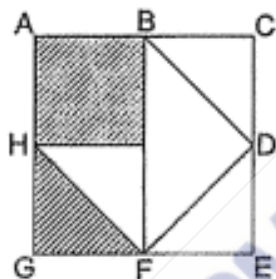
End of Paper 1 Booklet A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

- 16 Write down all the common factors of 20 and 36 that are greater than 1.

Ans: _____

- 17 Square ACEG is made up of 4 small triangles, 1 large triangle and 1 small square. $AB = BC = CD$. What fraction of the square ACEG is shaded?

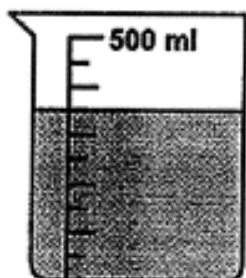


Ans: _____

- 18 Express $5\frac{4}{11}$ as a decimal. Give your answer correct to 1 decimal place.

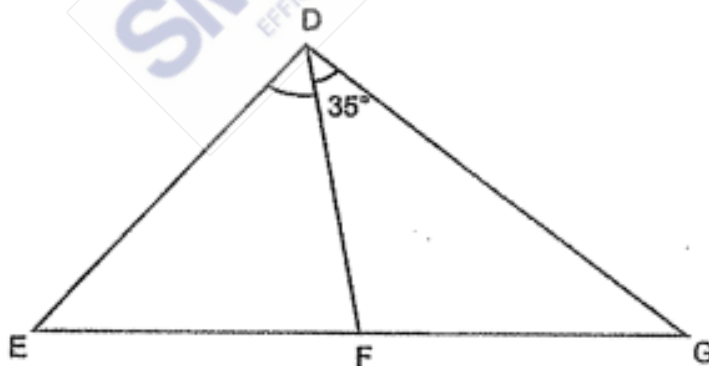
Ans: _____

- 19 A container contained some water at first as shown below.
 Harry used 0.06 l of water from the container. How much water was left?



Ans: _____ l

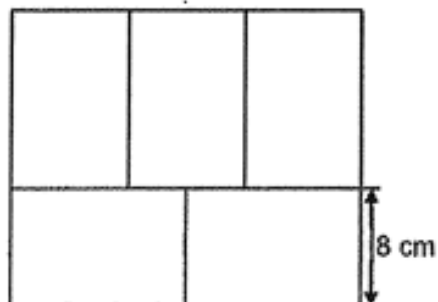
- 20 In the figure below, DFE and DFG are isosceles triangles. $FD = FE = FG$.
 $\angle FDG = 35^\circ$. Find $\angle FDE$.



Ans: _____ °

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 The figure below is made up of 5 identical rectangles. The breadth of one rectangle is 8 cm. What is the area of the figure?





Ans: _____ cm²

- 22 Samantha has some blue, pink and white beads.
 $\frac{7}{10}$ of the beads are blue. There are twice as many pink beads as white beads. What fraction of the beads is white?

Ans: _____

- 23** Shop A and shop B sold an identical television each at the same price, after the discounts shown below. What was the usual price of the television sold by shop A?

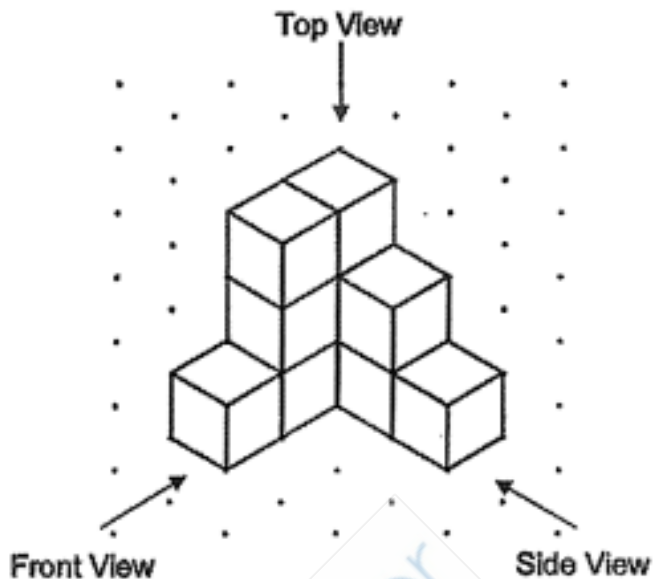
<p>Shop A</p>  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>40% Discount Usual Price: ?</p> </div>	<p>Shop B</p>  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>20% Discount Usual Price: \$1500</p> </div>
---	---

Ans: \$ _____

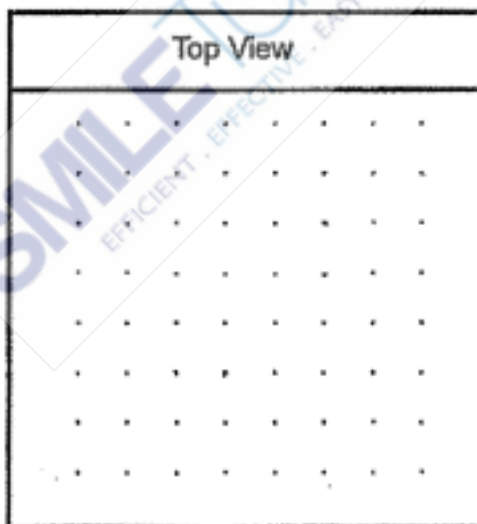
- 24** Matthew spent a total of \$15 on some rulers and pens. He bought 27 pens at 9 pens for \$y. He bought the rulers at \$2 each. How many rulers did he buy?

Ans: _____

- 25 Jason builds a solid using 10 unit cubes and glued them together.



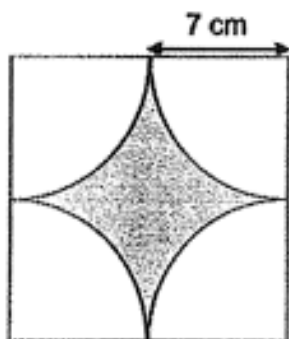
- (a) Draw the top view on the grid below.



- (b) Find the smallest number of unit cubes Jason can add to the solid to form a cubical solid.

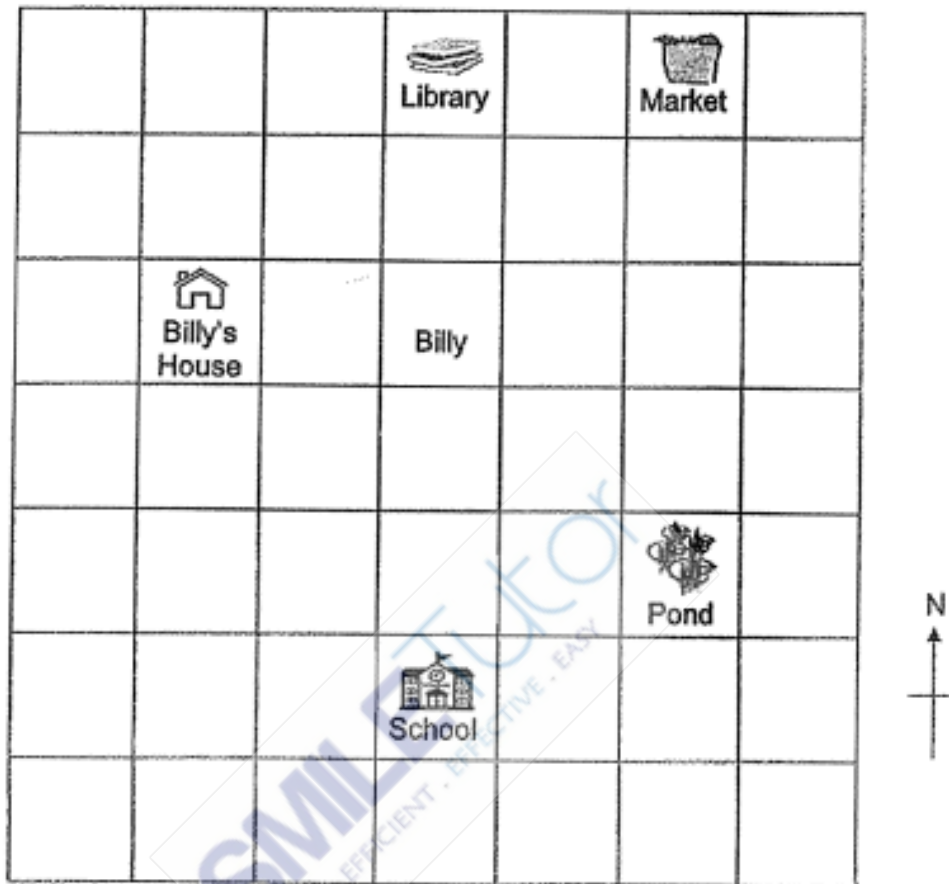
Ans: (b) _____

- 26** The figure below is made up of 4 identical quadrants and a square. What is the area of the shaded part? (Take $\pi = \frac{22}{7}$)



Ans: _____ cm^2

- 27 Billy's house, the library, the market, the pond and his school are located as shown in the square grid below.

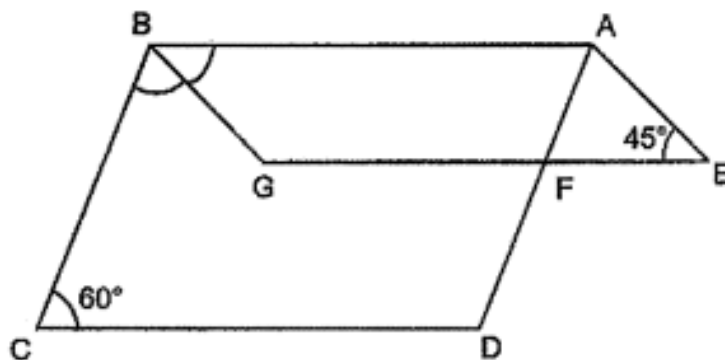


- (a) Billy is facing the pond. Where will he be facing after he turns 135° anti-clockwise?

Ans: (a) _____

- (b) A shopping mall will be built at a location south-east of Billy's house and north of the school. Put a tick (✓) in the square where the shopping mall will be built.

- 28** The diagram below shows two parallelograms ABCD and ABGE.
 $\angle AEG = 45^\circ$ and $\angle BCD = 60^\circ$.



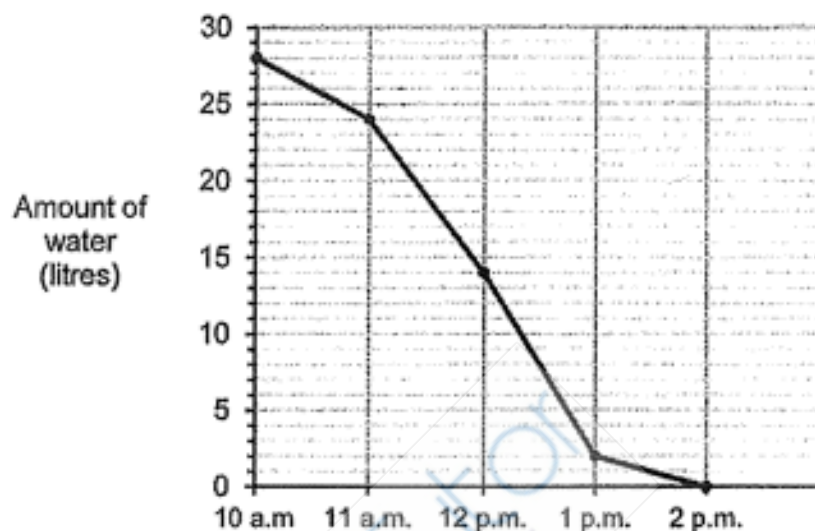
- (a) Find $\angle ABG$.

Ans: (a) _____°

- (b) Find $\angle CBG$.

Ans: (b) _____°

- 29 The line graph shows the amount of water in a tank from 10 a.m. to 2 p.m.
 The tank was $\frac{1}{4}$ filled with water at 10 a.m. Water flowed out of the tank from 10 a.m. to 2 p.m.



- (a) During which one hour interval was the flow of water out of the tank the greatest?

Ans: (a) _____ to _____

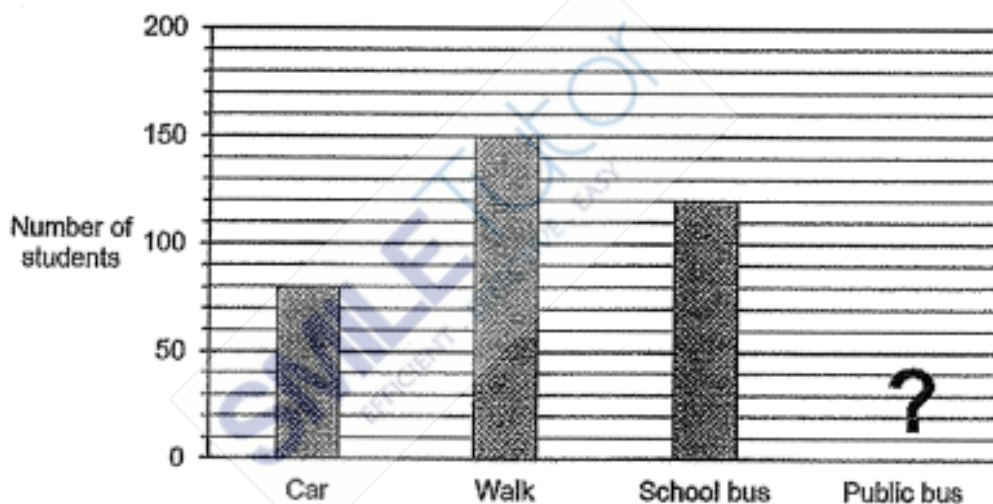
- (b) At 11 a.m., what fraction of the tank was filled with water ?

Ans: (b) _____

- 30 The pie chart shows how a group of students travel to school.



The bar graph also represents how the same group of students travel to school. The bar for the number of students who travel to school by public bus has not been drawn.



Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
There are 400 students altogether.			
$\frac{3}{5}$ of the students walk to school.			
50 students take public bus to school.			

End of Paper 1 Booklet B

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 (a) Use all the digits 3, 4, 5, 8 to form the greatest multiple of 5.

Ans: (a) _____

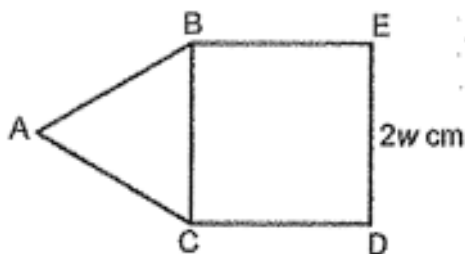
- (b) Use all the digits 3, 4, 5, 8 to form the smallest odd number between 4000 and 5000.

Ans: (b) _____

- 2 The number of red balloons is $\frac{2}{11}$ of the number of blue balloons. There are 1953 more blue balloons than red balloons. How many red balloons are there?

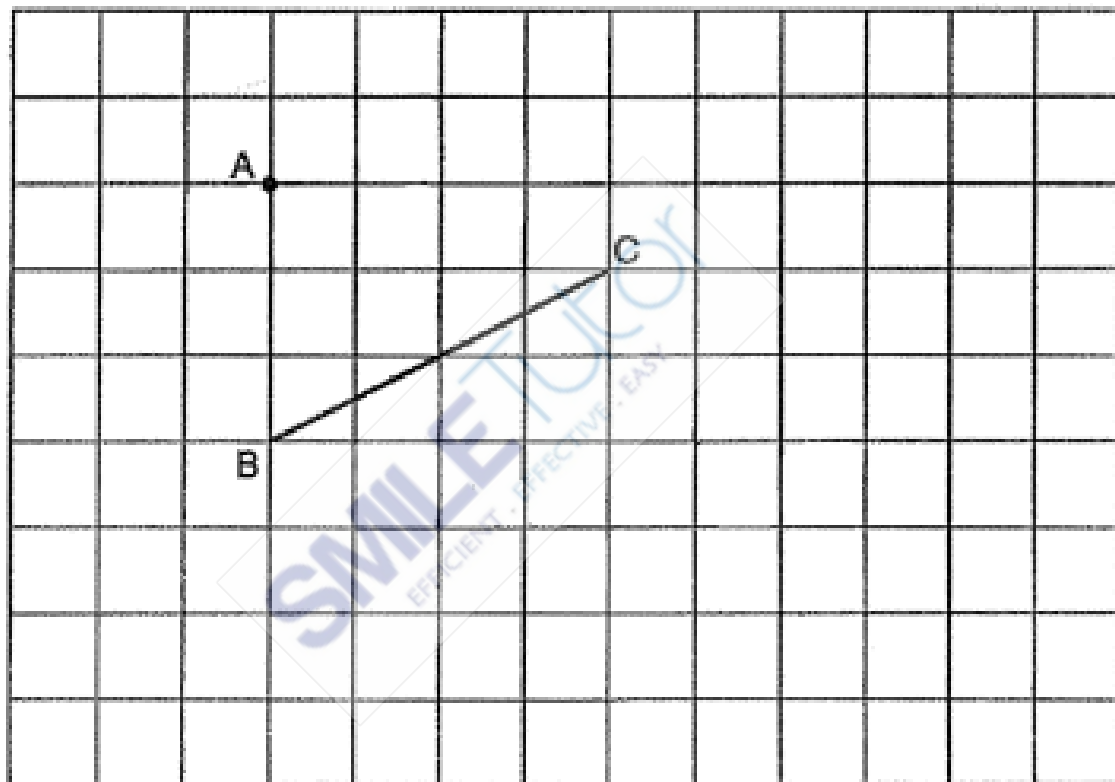
Ans: _____

- 3 The figure is made up of an equilateral triangle ABC and a square BCDE. DE = 2w cm. The perimeter of the figure is 140 cm. Find the value of w.

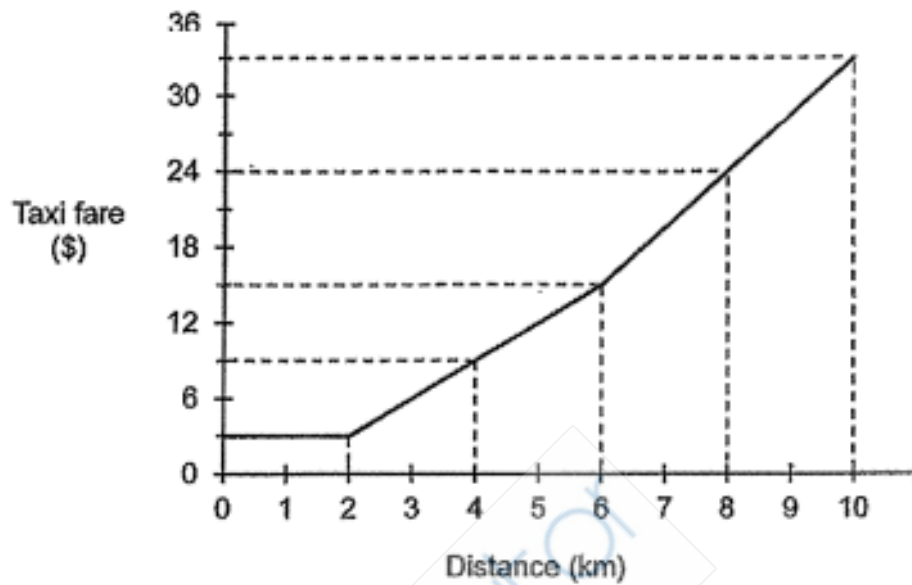


Ans: _____

- 4** In the square grid below, line BC has been drawn.
- (a) Draw a line parallel to line BC, passing through Point A.
- (b) Draw a right-angled triangle BCD, such that line $BC = CD$ and BC is perpendicular to line CD.



- 5 The graph shows the fare a taxi company charges for the first 10 kilometres.



John took a taxi and travelled for 9 km. How much did he pay?

Ans: \$ _____

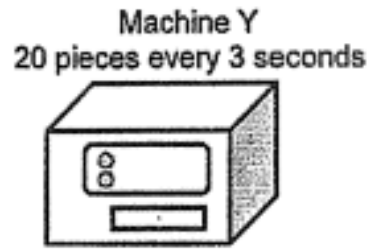
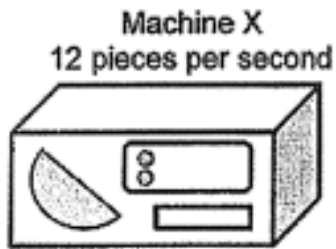
For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in the bracket [] at the end of each question or part-question. (45 marks)

- 6 Simon could buy 9 notebooks and 54 pencils with \$64.80. With that same amount of money, he could buy 24 notebooks. He then decided to buy only pencils. What was the most number of pencils Simon could buy with \$64.80?



Ans: _____ [3]

- 7 Two machines, X and Y, cut shapes at the rate shown below.

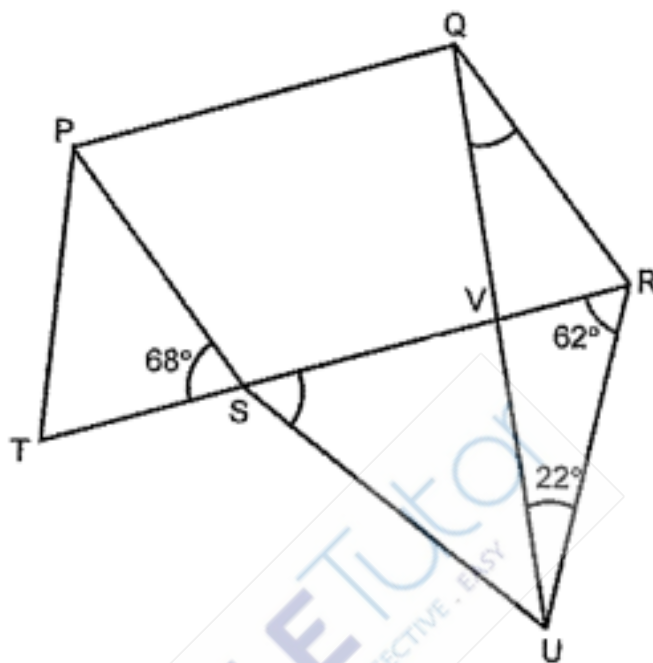


Machine X started cutting the shapes at 08 00 and it stopped at 08 30.
 Machine Y cut shapes for 45 minutes.
 How many shapes were cut in total by the two machines?



Ans: _____ [3]

- 8 PQRS is a parallelogram. TSR and QVU are straight lines. PST and SRU are isosceles triangles. $PT = PS$ and $SR = SU$.



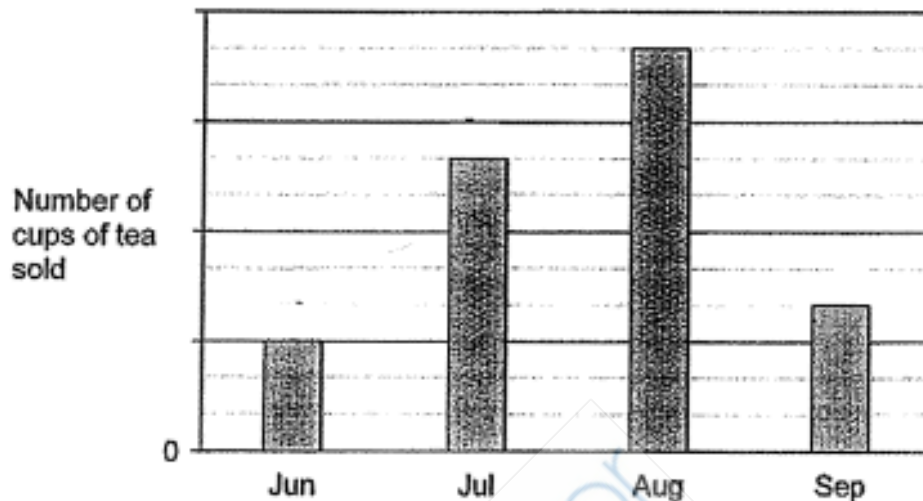
(a) Find $\angle RSU$.

Ans: (a) _____ [1]

(b) Find $\angle UQR$.

(b) _____ [2]

- 9 The bar graph shows the number of cups of tea sold by a shop from June to September. The number of cups of tea sold is not shown on the scale.



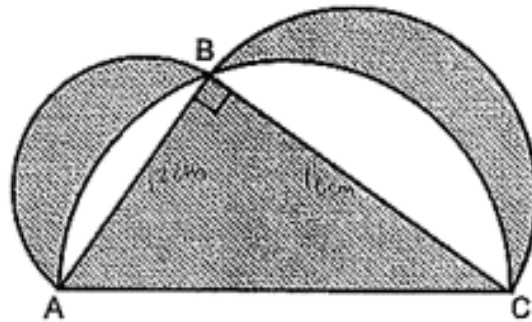
- (a) What was the percentage increase in the number of cups of tea sold from July to August?

Ans: (a) _____ [1]

- (b) The average number of cups of tea sold per month from June to September was 845. How many cups of tea were sold in September?

(b) _____ [2]

- 10** In the figure below, the diameters of three different semicircles form the sides of a right-angled triangle ABC . $AB = 12$ cm, $BC = 16$ cm and $AC = 20$ cm. Find the total area of the shaded parts. (Take $\pi = 3.14$)



Ans: _____ [4]

- 11 Anne, Beth and Crystal bought a present for their friend. The ratio of the amount Anne paid to the total amount Beth and Crystal paid was 3 : 5. The ratio of the amount Crystal paid to the total amount Anne and Beth paid was 2 : 3. Crystal paid \$21 more than Beth. Who paid the least for the present? How much did she pay for the present?



Ans: _____ paid the least.

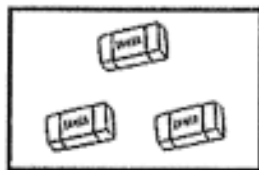
Amount paid: _____ [3]

- 12** Mrs Raja made some pineapple tarts and nutella tarts. She sold $\frac{7}{10}$ of her tarts. 75% of the tarts sold were nutella tarts. She sold 350 pineapple tarts. 30% of the unsold tarts were pineapple tarts. How many pineapple tarts were not sold?

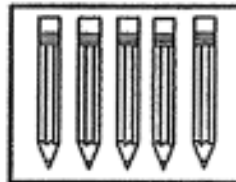


Ans: _____ [3]

- 13** In a shop, erasers and pencils are sold only in boxes.



Box of 3 erasers
\$5.20 per box



Box of 5 pencils
\$6.65 per box

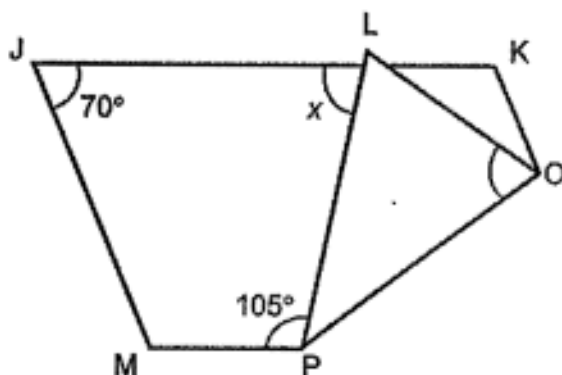
- (a) Mrs Lim wants to get 40 erasers and 78 pencils for her students. What is the least amount of money she will need to spend on the erasers and pencils?

Ans: (a) _____ [2]

- (b) Mr Wong spent \$328.30 to buy a total of 57 boxes of erasers and pencils. How many boxes of pencils did he buy?

(b) _____ [2]

14 JKLM is a parallelogram, folded along line OP.



(a) Find $\angle x$.

Ans: (a) _____ [1]

(b) Find $\angle LOP$.

(b) _____ [2]

(c) Circle the words that describe Triangle LOP correctly in the following statement:

Triangle LOP (is / is not) an isosceles triangle because $\angle LOP$ (is / is not) the same as $\angle PLO$.

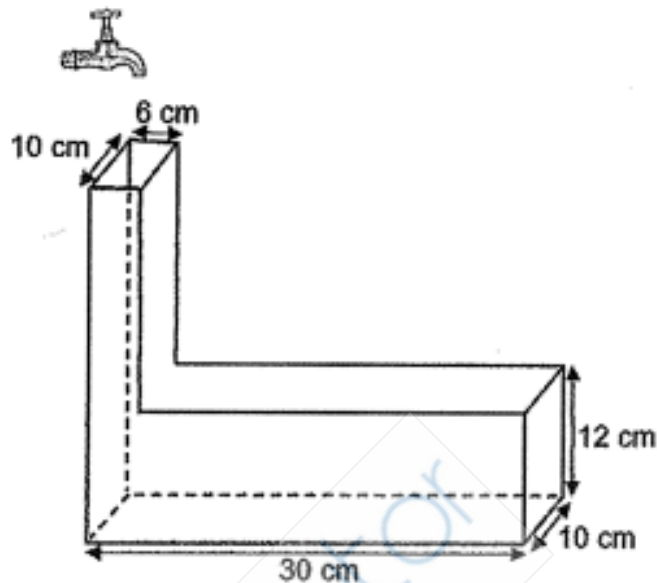
[1]

- 15 Mrs Sim baked some cookies and packed all the cookies in 14 small boxes and 3 large boxes. She filled each small box with the same number of cookies and each large box with the same number of cookies. There were 4 more cookies in each large box than in each small box. $\frac{7}{9}$ of the cookies baked were packed in the small boxes. How many cookies were there in each small box?



Ans: _____ [5]

- 16** The figure below shows an empty container. A tap was turned on and water flowed into the container at a rate of 0.8 litres per minute. The tap was turned off 6 minutes later.



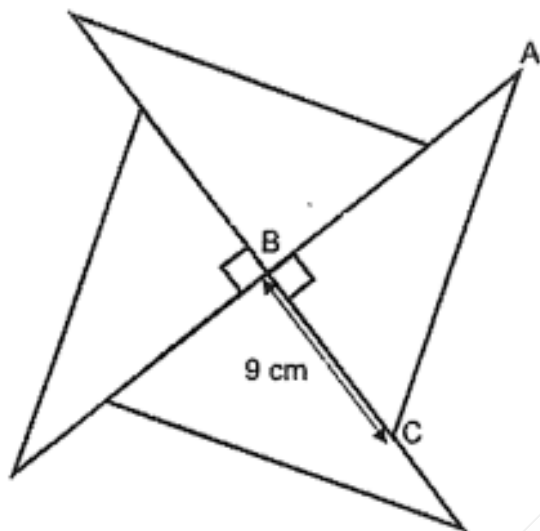
- (a) Find the height of the water level from the base of the container.

Ans: (a) _____ [3]

- (b) All the water was then poured into a cubical tank with a base area of 289 cm^2 . How much more water was needed to fill the tank to its brim?

(b) _____ [2]

- 17 Four identical right-angled triangles are used to form the figure shown below. $BC = 9$ cm. The perimeter of the figure is 72 cm.



- (a) Find the perimeter of each right-angled triangle.

Ans: (a) _____ [2]

- (b) AC is 6 cm shorter than the total lengths of AB and BC. Find the area of the figure.

(b) _____ [3]

ANSWER SHEET

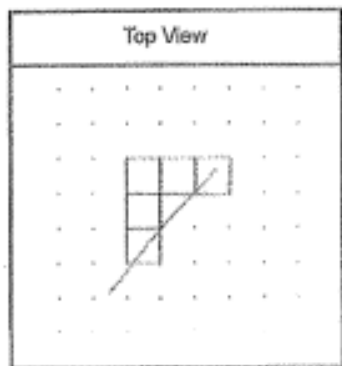

PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	1	1	4	2	3	4	4	2

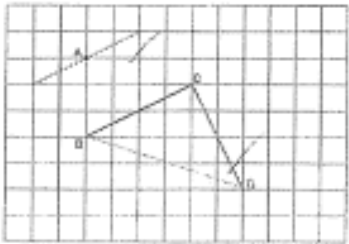
Q 11	Q12	Q13	Q14	Q15
1	2	3	3	4

PAPER 1 BOOKLET B

Q16)	2, 4
Q17)	$\frac{3}{8}$
Q18)	5, 4
Q19)	0.29ℓ
Q20)	$180 - 35 \times 2 = 110$ $180 - 110 = 70$ $(180 - 70) \div 2 = 55^\circ$
Q21)	$8 \times 3 + 2 = 12$ $12 + 8 = 20$ $8 \times 3 = 24$ $20 \times 24 = 480\text{cm}^2$
Q22)	$\frac{1}{10}$
Q23)	$1500 \times \frac{80}{100} = 1200$ $1200 \times \frac{100}{60} = \2000
Q24)	$(\frac{15 - 3y}{2})$

Q25)	a) <div><div>Top View</div></div> b) 17									
Q26)	$7 \times 7 \times \frac{22}{7} = 154$ $14 \times 14 = 196$ $196 - 154 = 42\text{cm}^2$									
Q27)	a) library b) <div></div>									
Q28)	a) 45° b) $180 - 60 = 120$ $120 - 45 = 75^\circ$									
Q29)	a) 12pm to 1pm b) $\frac{3}{14}$									
Q30)	<div><table><tr><td>√</td><td></td><td></td></tr><tr><td></td><td>√</td><td></td></tr><tr><td>√</td><td></td><td></td></tr></table></div>	√				√		√		
√										
	√									
√										

PAPER 2

Q1)	a) 8435 b) 4385
Q2)	$11 - 2 = 9$ $1953 \div 9 = 217$ $217 \times 2 = 434$
Q3)	$140 \div 5 = 28$ $28 \div 2 = 14$
Q4)	
Q5)	$(33 - 24) \div 2 = 4.5$ $24 + 4.5 = \$28.50$
Q6)	$64.8 \div 24 = 2.7$ $64.8 - 2.7 \times 9 = 40.5$ $40.5 \div 54 = 0.75$ $64.8 \div 0.75 = 86.4$ ≈ 86
Q7)	$720 \times 30 = 21600$ $60 \div 3 = 20$ $20 \times 20 = 400$ $400 \times 45 = 18000$ $21600 + 18000 = 39600$
Q8)	a) $180 - 62 \times 2 = 56^\circ$ b) $180 - 68 = 112$ $180 - 112 = 68$ $180 - 68 - 62 - 22 = 28^\circ$
Q9)	a) $\frac{11 - 8}{8} \times 100\% = 37.5\%$ b) $845 \times 4 = 3380$ $3380 \div (3 + 8 + 11 + 4) = 130$ $730 \times 4 = 520$

Q10)	$12 \times 16 \div 2 = 96$ $20 \div 2 = 10$ $10 \times 10 \times \pi \div 2 = 50\pi$ $12 \div 2 = 6$ $6 \times 6 \times \pi \div 2 = 18\pi$ $16 \div 2 = 8$ $18\pi + 8 \times 8 \times \pi \div 2 = 50\pi$ $50\pi - (50\pi - 96) + 96 = 192\text{cm}^2$
Q11)	$3 : 5 = 15 : 25$ $2 : 3 = 16 : 24$ $25 - 16 = 9$ $C : A : B$ $16 : 15 : 9$ $16 - 9 = 7$ $21 \div 7 = 3$ $3 \times 9 = 27$ Ans : <u>Beth</u> paid the least. Amount paid : <u>\$27</u>
Q12)	$100 - 75 = 25$ $\frac{7}{10} \times \frac{25}{100} = \frac{7}{40}$ $1 - \frac{7}{10} = \frac{3}{10}$ $\frac{3}{10} \times \frac{30}{100} = \frac{9}{100}$ $350 \div 7 \times 40 \div 100 \times 9 = 180$
Q13)	a) $40 \div 3 = 13\text{R}1$ $13 + 1 = 14$ $14 \times 5.2 = 72.8$ $78 \div 5 = 15\text{R}3$ $15 + 1 = 16$ $16 \times 6.65 + 72.8 = \179.20 b) $5.20 \times 57 = 296.4$ $328.3 - 296.4 = 31.9$ $6.65 - 5.2 = 1.45$ $31.9 \div 1.45 = 22$
Q14)	a) $180 - 70 = 110$ $360 - 110 - 70 - 105 = 75^\circ$

	<p>b) $(180 - 105) \div 2 = 37.5$ $180 - 37.5 - 70 = 72.5^\circ$</p> <p>c) is not / is not</p>
Q15)	<p>$\frac{7}{9} \div 14 \times 3 = \frac{1}{6}$</p> <p>$1 - \frac{7}{9} = \frac{2}{9}$</p> <p>$\frac{2}{9} - \frac{1}{6} = \frac{1}{18}$</p> <p>$4 \times 3 = 12$</p> <p>$(12 \times 8) \div 6 \div 3 = 12$</p>
Q16)	<p>a) $0.8\ell = 800m\ell$ $800 \times 6 = 4800$ $4800 - 12 \times 10 \times 30 = 1200$ $1200 \div 10 \div 6 = 20$ $20 + 12 = 32cm$</p> <p>b) $298 \times 17 - 4800 = 113cm^3$</p>
Q17)	<p>a) $(72 + 8 \times 9) \div 4 = 36cm$</p> <p>b) $(36 + 6) \div 2 - 9 = 12$ $12 \times 9 \times 2 = 216cm^2$</p>

NAN CHIAU PRIMARY SCHOOL SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice and shade your answer (1, 2, 3 or 4) on the Optical Answer Sheet.

(20 marks)

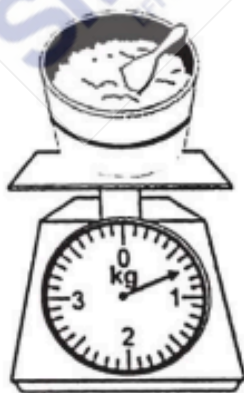
- 1 Which of the following is the first common multiple of 6 and 9?

(1) 15
(2) 18
(3) 3
(4) 54

- 2 In the number 410.582, which digit is in the hundredths place?

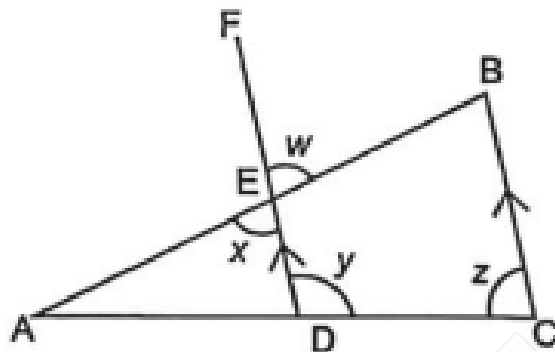
(1) 5
(2) 2
(3) 8
(4) 4

- 3 The figure shows a container of rice.
How much more rice needs to be added to make it 1 kg?



(1) 0.3 kg
(2) 0.7 kg
(3) 30 g
(4) 70 g

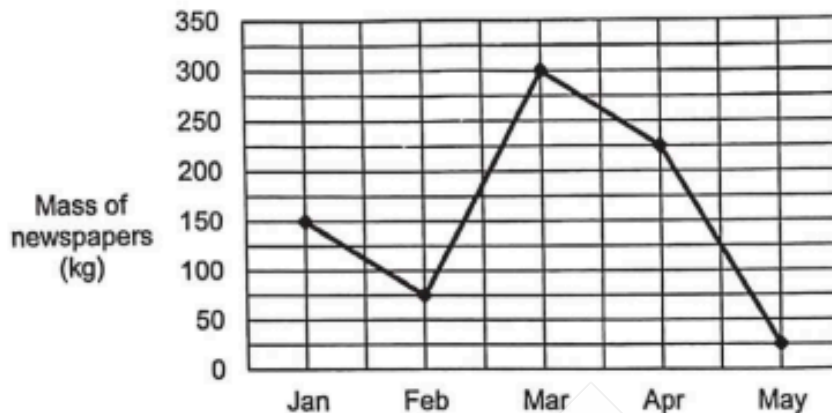
- 4 In the figure below, ABC is a triangle. BC is parallel to FD . Which of the following statements is true?



- (1) $\angle w + \angle x = 180^\circ$
 (2) $\angle w + \angle z = 180^\circ$
 (3) $\angle x + \angle y = 180^\circ$
 (4) $\angle y + \angle z = 180^\circ$
- 5 Which of these fractions is closest to $\frac{1}{2}$?

- (1) $\frac{3}{5}$
 (2) $\frac{4}{7}$
 (3) $\frac{5}{9}$
 (4) $\frac{6}{11}$

- 6 The graph below shows the mass of newspapers the Primary 6 classes had collected over 5 months.

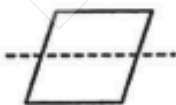


In which month was the mass of newspapers collected thrice that of Feb?

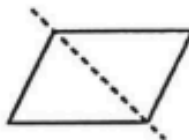
- (1) Jan
 - (2) Mar
 - (3) Apr
 - (4) May
- 7 Figures A and B are rhombuses while Figures C and D are parallelograms. Which of the following shows that the dotted line drawn is a line of symmetry of the figure?



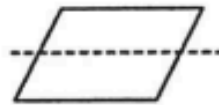
A



B



C



D

- (1) A only
- (2) A and C
- (3) B and D
- (4) A, B, C and D

- 8 Arrange the following decimals from the smallest to the greatest.

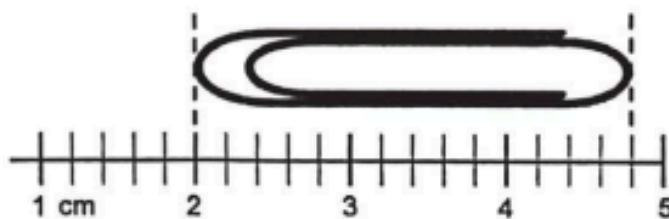
4.5, 0.45, 4.05, 0.54

- | | (smallest) | | (greatest) |
|-----|------------|--------|--------------|
| (1) | 0.45 | 4.5 | 4.05 0.54 |
| (2) | 0.45 | 0.54 | 4.05 4.5 |
| (3) | 0.54 | 0.45 | 4.05 4.5 |
| (4) | 0.54 | , 0.45 | , 4.5 , 4.05 |

- 9 Daniel started driving at 19 45. He arrived at Jurong 1 h 20 min later. At what time did he reach Jurong?

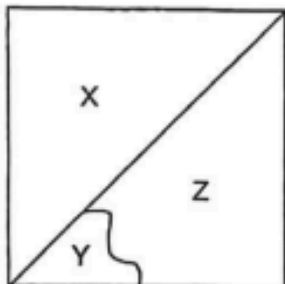
- (1) 6.25 a.m.
 (2) 6.25 p.m.
 (3) 9.05 a.m.
 (4) 9.05 p.m.

- 10 What is the length of the paper clip?



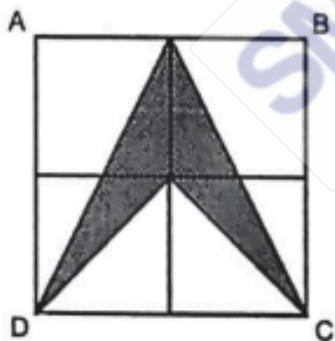
- (1) 2.0 cm
 (2) 2.4 cm
 (3) 2.8 cm
 (4) 4.8 cm

- 11 A square is divided into 3 parts, X, Y and Z. The ratio of the area of Y to the area of Z is 1 : 6. The area of Z is 126 cm². Find the area of X.



- (1) 21 cm²
- (2) 108 cm²
- (3) 147 cm²
- (4) 252 cm²

- 12 Square ABCD is made up of 4 smaller identical squares. What fraction of the square ABCD is shaded?



- (1) $\frac{1}{2}$
- (2) $\frac{1}{4}$
- (3) $\frac{1}{8}$
- (4) $\frac{1}{16}$

- 13 Kelly and Lucas saved \$800 altogether. $\frac{1}{4}$ of Kelly's savings was \$65 more than $\frac{1}{5}$ of Lucas's savings. How much money did Lucas save?

- (1) \$240
- (2) \$260
- (3) \$300
- (4) \$540

- 14 The figure below shows a piece of square paper with side 12 cm. Natalie folded the piece of paper into half as shown below and cut out a rectangular strip that measured 5 cm by 3 cm. After that, she unfolded the remaining piece of paper. What was the area of the remaining piece of paper?



- (1) 30 cm²
 - (2) 114 cm²
 - (3) 129 cm²
 - (4) 144 cm²
- 15 Yu Xuan has 3 cards printed with different whole numbers. When the numbers on the cards are added two at a time, the sums are 68, 88 and 110. What is the largest number printed on the card?
- (1) 22
 - (2) 45
 - (3) 65
 - (4) 90

End of Paper 1 Booklet A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

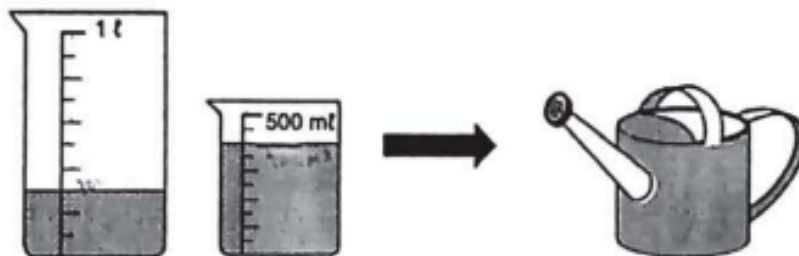
- 16 Mr Thio sold his car for \$173 489. Round the amount to the nearest thousand dollars.

Ans: \$ _____

- 17 The temperature of a metal rod was 32°C . It was then lowered into a glass of hot water and the temperature of the metal rod rose to 40°C . Find the percentage increase in the temperature of the metal rod.

Ans: _____ %

- 18 All the water in the two beakers below was poured into an empty watering can. What was the total volume of water in the watering can?



Ans: _____ ml

19 Write down one decimal between 1.9 and 2

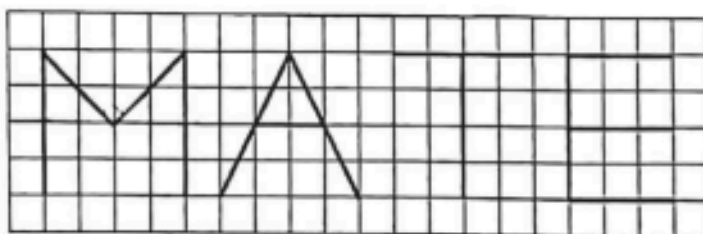
Ans: _____

20 Find the value of $\frac{3}{7} + \frac{2}{9}$. Give your answer as a mixed number in its simplest form.

Ans: _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 Four letters M, A, T, E are shown on a square grid.



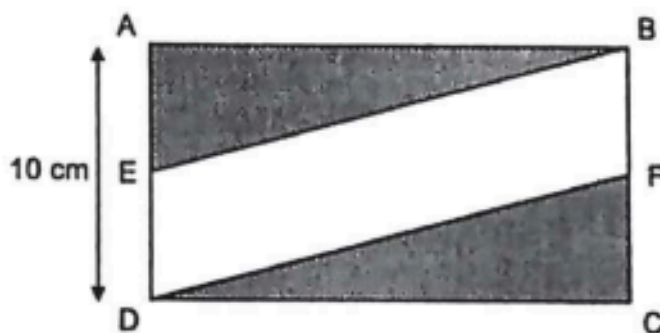
- (a) Name the letter(s) that has / have perpendicular lines.

Ans: (a) _____

- (b) Name the letter(s) that has / have parallel lines.

Ans: (b) _____

- 22 ABCD is a rectangle. E and F are the midpoints of AD and BC respectively. AD is 10 cm. The area of the unshaded part is 90 cm². Find the length of AB.



Ans: _____ cm

- 23** Janelle bought 4 kg of chocolates. She kept $\frac{2}{5}$ of it for herself and gave the rest equally to some friends. Each friend received $\frac{1}{5}$ kg of chocolates. How many friends were there?

Ans: _____

- 24** The table below shows the prices for printing photographs in a shop.

Number of photographs	Price
First 10 pieces	\$3.40 per piece
Every additional piece	\$2 per piece

Leon paid \$78 to print his photographs.
How many pieces of photographs did he print?

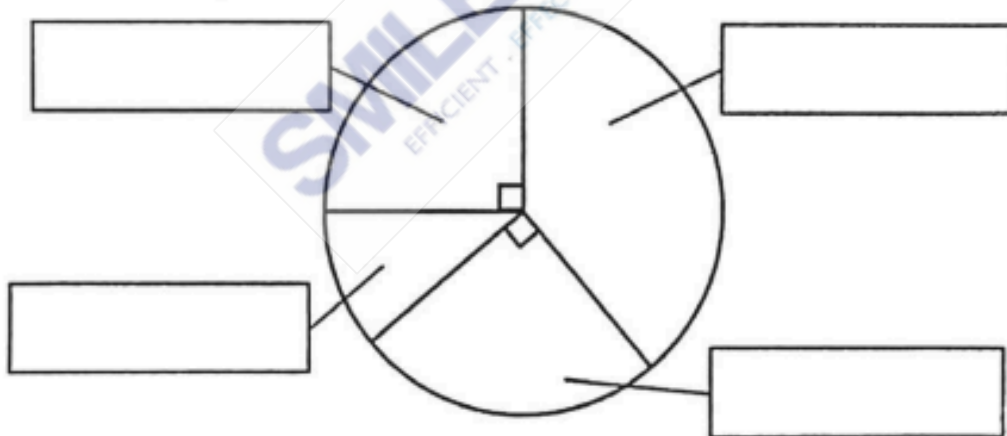
Ans: _____

- 25** Sarah had 84 books and Ritesh had 52 books. After Sarah gave some of her books to Ritesh, the ratio of the number of books Sarah had to the number of books Ritesh had was 3 : 5. How many books did Ritesh have in the end?

Ans: _____

- 26** A bakery sold four types of cupcakes. The most number of cupcakes sold were chocolate cupcakes. The least number of cupcakes sold were vanilla cupcakes. The same number of hazelnut and peanut cupcakes were sold.

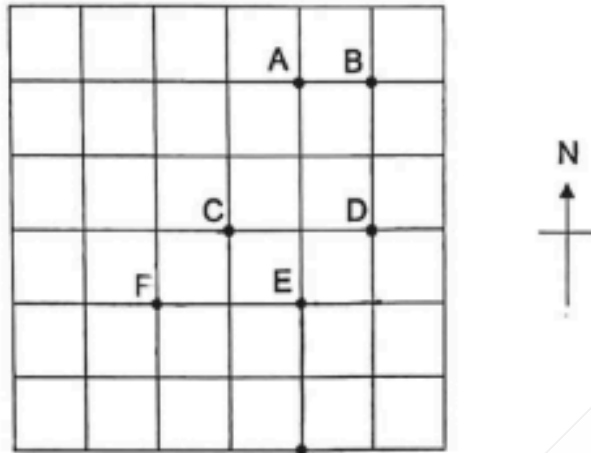
(a) The pie chart represents the number of each type of cupcakes sold. Label the parts with the correct types of cupcakes (chocolate, hazelnut, peanut, vanilla).



(b) 180 chocolate and vanilla cupcakes were sold. What was the total number of cupcakes sold?

Ans: (b) _____

27 The square grid shows the positions of points A, B, C, D, E, F and G.



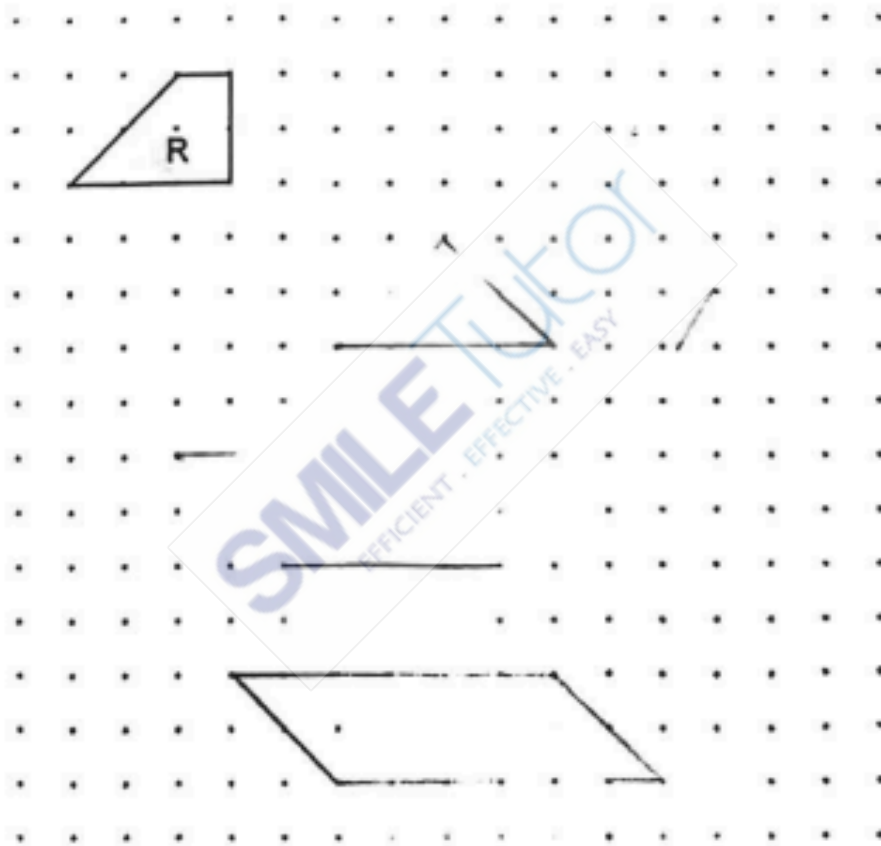
(a) Point C is north-east of Point _____

Ans: (a) Point _____

(b) Nadia stood at one of the points facing G. After she turned 135° anti-clockwise, she faced D. Which point was Nadia at?

Ans: (b) Point _____

- 28** A trapezium **R** is drawn by joining the dots on the square grid below with four straight lines. In the same way,
- (a) draw a triangle with the same area as **R**. Label the triangle **S**.
- (b) draw a parallelogram with twice the perimeter of **R**. Label the parallelogram **T**.



- 29 The table shows the number of books read by a class in four months.

Month	Number of books read
March	65
April	53
May	78
June	?

In order to qualify for the 'Class Reader Award', the class has to read an average of 70 books for 3 out of 4 months. What is the least number of books that the class has to read in June in order to qualify for the award?

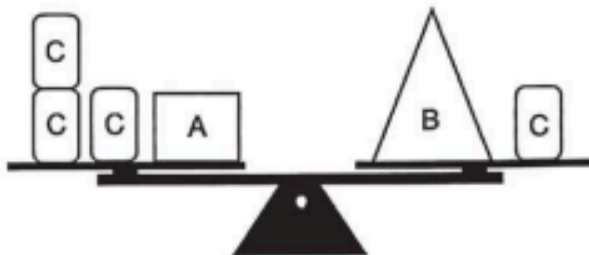
Ans: _____

- 30 A fruit stall had the same number of apples, pears and mangoes at first. After 22 mangoes, some apples and pears were sold, there were 85 fruits left. There were twice as many apples as pears left. The number of mangoes left was 10 fewer than the number of apples left. How many pears were sold?

Ans: _____

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 The figure below shows 6 objects placed on a balance scale.



Object A is 240 g lighter than object B. Find the mass of one object C.

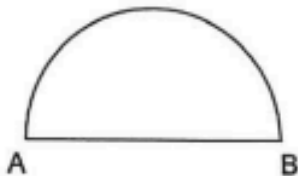
Ans: _____ 9

- 2 The price of a camera was \$480. Mr Ho bought it at a discount of 5% during a sale. How much did Mr Ho pay for the camera?



Ans: \$ _____

- 3 The figure shows a semicircle. AB is the diameter of the semicircle.



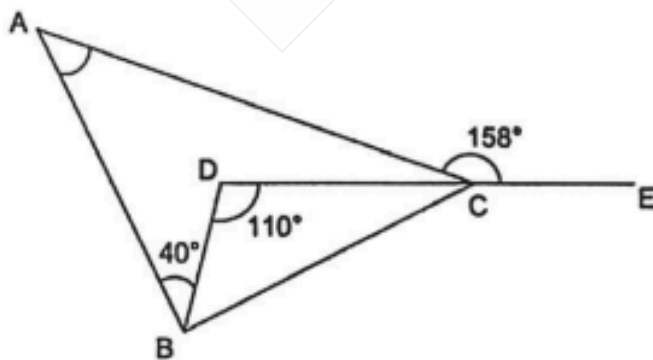
- (a) Measure and write down the diameter of the semicircle to the nearest centimetre.

Ans: (a) _____ cm

- (b) Find the perimeter of the semicircle. Take $\pi = 3.14$

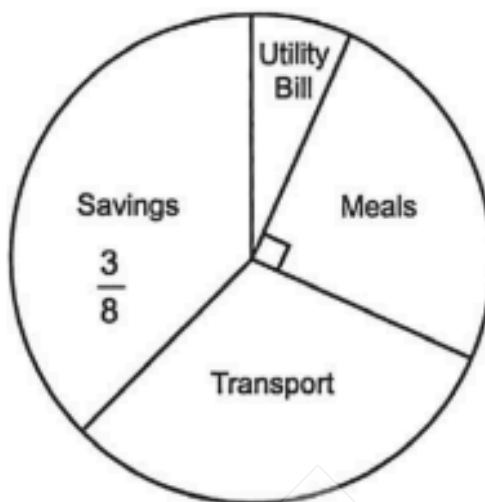
Ans: (b) _____ cm

- 4 ABC and DBC are triangles. DCE is a straight line. $\angle ABD = 40^\circ$, $\angle BDC = 110^\circ$ and $\angle ACE = 158^\circ$. Find $\angle BAC$.



Ans: _____ °

- 5 The pie chart shows Lynn's spending and savings in April.



She also recorded her spending in the table below.

	Amount Spent
Utility Bill	\$180
Transport	\$825
Meals	?

How much did she spend on meals?

Ans: \$ _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in the bracket [] at the end of each question or part-question. (45 marks)

- 6 Ben used 140 wooden sticks to form some triangles and squares as shown below.



He formed twice as many triangles as squares.

- (a) Find the total number of triangles and squares formed.

Ans: (a) _____ [2]

- (b) How many wooden sticks did Ben use for forming triangles?

Ans: (b) _____ [1]

- 7 Karen and Joanne counted their own heart beats after doing some exercises. Karen counted 42 heart beats in 15 seconds and Joanne counted 45 heart beats in 18 seconds.

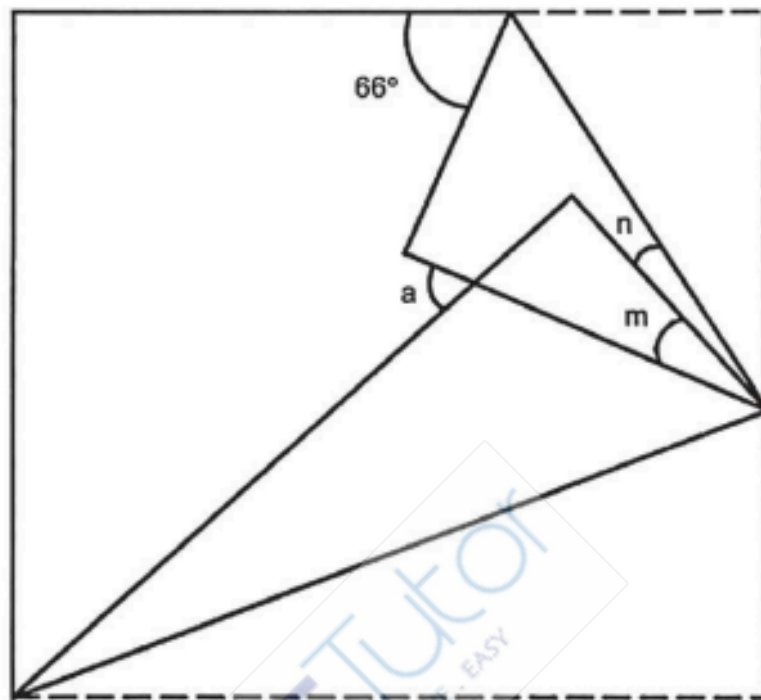
(a) Which girl had a slower heart rate?

Ans: (a) _____ [1]

- (b) Find the difference in the number of heart beats of the two girls in 1 minute.

Ans: (b) _____ [2]

- 8 The figure below shows a rectangular piece of paper being folded at two of its corners. $\angle m$ is twice of $\angle n$. Find $\angle a$.



Ans: _____ [3]

- 9 The table below shows the average marks of the students in class 6A for a test.

	Number of students	Average marks
Boys	15	76
Girls	20	83

- (a) Find the average marks of the students in class 6A.

Ans: (a) _____ [2]

- (b) A new student, Jane, joined class 6A and took the test. The average marks of the class became 79. How many marks did Jane score for the test?

Ans: (b) _____ [1]

- 10** The table shows the number of pens a shop had.

Colour	Blue	Red	Green	Black
Number of Pens	86	115	160	?

- (a) 45% of the pens were blue pens and black pens.
How many black pens were there?

Ans: (a) _____ [2]

- (b) The shop owner bought more blue pens. Did the percentage of the number of green pens increase, decrease or remain the same?

Ans: (b) _____ [1]

- 11** Zikry was reading a book. At the end of the first day, the ratio of the number of pages he had read to the number of pages he had not read was 2 : 5. After reading another 108 pages on the second day, he was left with 20% of the book unread. How many pages did the book have?



Ans: _____ [3]

- 12** Figure 1 shows a small rectangle ABCD. Figure 2 is made up of six such rectangles. The total shaded area of Figure 2 is 245 cm^2 .

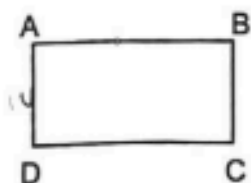


Figure 1

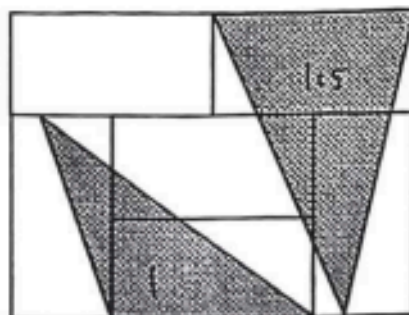


Figure 2

- (a) Find the length of AB and BC.

Ans: (a) AB: _____
 BC: _____ [2]

- (b) Find the total unshaded area in Figure 2.

Ans: (b) _____ [2]

- 13** Mark had three types of towels – face towels, hand towels and bath towels. The number of bath towels was $\frac{3}{5}$ the number of face towels. After selling $\frac{1}{4}$ of the hand towels, he still had 22 more hand towels than face towels.

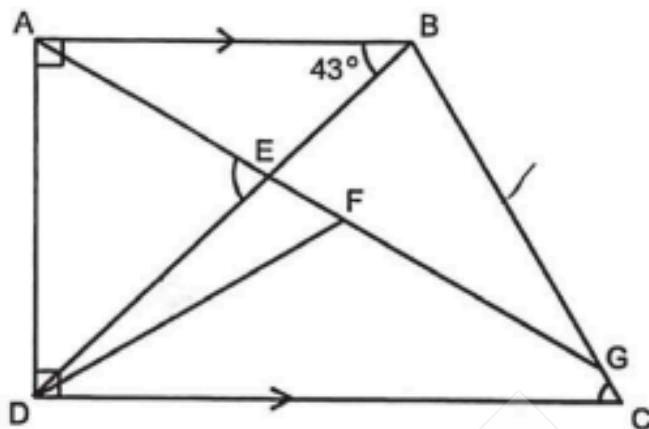
- (a) Given that there were 84 bath towels, how many hand towels were not sold?

Ans: (a) _____ [2]

- (b) What was the total number of the three types of towels he had at first?

Ans: (b) _____ [2]

- 14 In the figure below, ABCD is a trapezium, ADF is an equilateral triangle and ABG is an isosceles triangle where $AB = BG$. $\angle ABD = 43^\circ$. AEF and DEB are straight lines.



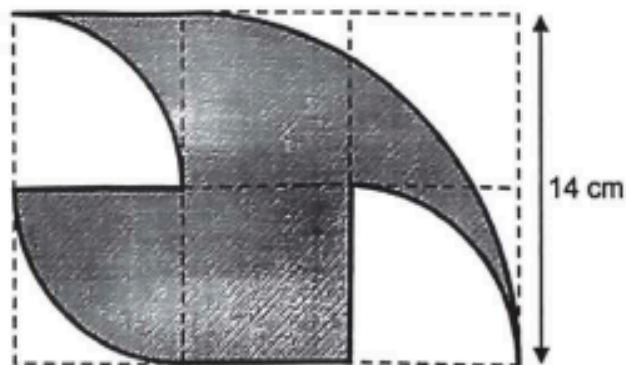
- (a) Find $\angle AED$.

Ans: (a) _____ [2]

- (b) Find $\angle BCD$.

Ans: (b) _____ [2]

- 15 The figure below is drawn on a square grid. Take $\pi = \frac{22}{7}$



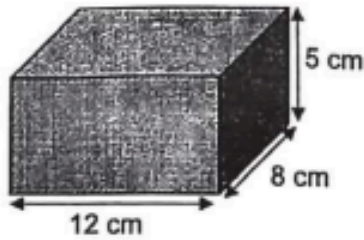
- (a) Find the perimeter of the figure.

Ans: (a) _____ [2]

- (b) Find the area of the figure.

Ans: (b) _____ [3]

- 16** Delvi had a rectangular block of wood 12 cm by 8 cm by 5 cm. He painted all the faces of the block.



- (a) Find the volume of the block of wood.

Ans: (a) _____ [1]

- (b) Find the total surface area of the block of wood that is painted.

Ans: (b) _____ [2]

- (c) Delvi then cut the block into 1-cm cubes. How many of these cubes have none of the faces painted?

Ans: (c) _____ [2]

- 17 Hazel had a sum of money. She bought 2 types of candles, large and small. She paid \$34.20 for 3 large candles and 5 small candles.



Large candles



Small candles

She could not buy another large candle with her remaining money as she was short of \$2.60. Instead, she bought another small candle and had \$0.80 left.

- (a) How much money did Hazel have at first?

Ans:(a) _____ [3]

- (b) John bought 39 large and small candles. He spent a total of \$202. How many large candles did he buy?

Ans:(b) _____ [2]

ANSWER SHEET

- (1) 2
- (2) 3
- (3) 1
- (4) 4
- (5) 4
- (6) 3
- (7) 1
- (8) 2
- (9) 4
- (10) 3
- (11) 3
- (12) 2
- (13) 3
- (14) 2
- (15) 3

$$16. 173000$$

$$17. 25$$

$$18. 700$$

$$19. 1.91$$

$$20. 1\frac{2}{14}$$

$$21a) M, E, T$$

$$21b) M, E$$

$$22. 18$$

$$23. 12$$

$$24. 32$$

$$25. 85$$

$$26. 360$$

$$27a) F$$

$$27b) E$$

$$28.$$

$$29.$$

$$30.$$

$$29. 67$$

$$30. 31$$

$$1. 240 \div 2 = 120$$

Ans. 120g

$$2. 100 - 5 = 95$$

$$480 \times \frac{95}{100}$$

$$= 456$$

Ans. \$456

$$3. a) 4 \text{ cm}$$

$$b) 4 \times \pi \left(\frac{1}{2} + 4 \right) = 10.28$$

Ans. 10.28 cm

$$4. \angle ACB \rightarrow 180^\circ - 158^\circ$$

$$= 22^\circ$$

$$\angle BDC \rightarrow 360^\circ - 110^\circ$$

$$= 250^\circ$$

$$\angle BAC \rightarrow 360^\circ - 250^\circ - 22^\circ - 40^\circ$$

$$= 48^\circ$$

Ans. 48°

$$5. \frac{3}{8} + \frac{1}{4} = \frac{5}{8}$$

$$1 - \frac{5}{8} = \frac{3}{8}$$

$$180 \div 8 \times 5 = 112.5$$

$$1009 \times \frac{3}{8} \times \frac{1}{4} = 670$$

Ans. \$670

$$6. a) 3 \times 2 + 4 = 10$$

$$140 \div 10 = 14$$

$$14 \times 2 + 4 = 32$$

Ans. a) 32

$$b) 14 \times 2 \times 3 = 84$$

Ans. b) 84

$$7. a) 45 \div 18 \times 15 = 37.5$$

Karen per 15 secs

42

per sec

Ans. a) Joanne

$$7. b) 45 \div 18 \times 60 = 150$$

$$42 \div 15 \times 60 = 168$$

$$168 - 150 = 18$$

Ans. b) 18

$$8. (180^\circ - 66^\circ) \div 2$$

$$= 57^\circ$$

$$\angle m \rightarrow (180^\circ - 57^\circ - 90^\circ) \div 2$$

$$= 22^\circ$$

$$\angle a \rightarrow 180^\circ - 90^\circ - 22^\circ$$

$$= 68^\circ$$

Ans. 68°

$$9. a) 70 \times 10 + 76 \times 15 + 20 \times 93$$

$$= 2800$$

$$15 \div 20 = 0.75$$

$$2800 \div 0.75 = 3733.33$$

Ans. a) 3733.33

$$9. b) 35 + 1 = 36$$

$$36 \times 79 = 2844$$

$$2844 - 2800 = 44$$

Ans. b) 44

$$10. a) 100 - 45 = 55$$

$$(15 + 160) \div 55 = 5$$

$$15 \times 45 - 86 = 139$$

Ans. a) 139

$$10. b) \text{Ans. b) Decrease}$$

$$11) 2 + 5 = 7$$

$$\frac{5}{7} - \frac{2}{10} = \frac{19}{70}$$

$$108 \times \frac{19}{70} = 210$$

Ans. 210

$$12. a) 245 \times 2 = 490$$

$$440 \div 5 = 88$$

$$88 = 14 \times 7$$

Ans. a) 14 cm

b) 7 cm

$$13. a) 84 \times \frac{5}{8} = 105$$

$$140 + 22 = 162$$

Ans. a) 162

$$b) 1 - \frac{3}{4} = \frac{1}{4}$$

$$162 \times \frac{1}{4} + 140 \times \frac{3}{4} = 440$$

Ans. b) 440

Joanne per 15 secs

37.5

stones

$$14. a) \angle BAE \rightarrow 90^\circ - 60^\circ = 30^\circ$$

$$\angle AEB \rightarrow 180^\circ - 30^\circ - 43^\circ = 107^\circ$$

$$\angle AED \rightarrow (360^\circ - 107^\circ \times 2) \div 2 = 73^\circ$$

$$\text{Ans a) } 73^\circ$$

$$14 b)$$

$$\angle ABB \rightarrow 180^\circ - 30^\circ - 12^\circ = 120^\circ$$

$$\angle BCD \rightarrow 180^\circ - 120^\circ = 60^\circ$$

$$\text{Ans b) } 60^\circ$$

$$15 a) 14 \div 2 = 7$$

$$\frac{2}{3} \times 14 \times \frac{3}{4} = 33$$

$$14 \times 2 = 28$$

$$\frac{2}{3} \times 28 \times \frac{1}{4} = 22$$

$$22 + 33 + 7 \times 4 = 83$$

$$\text{Ans. a) } 83 \text{ cm}$$

$$15 b) 7 \times 7 \times \frac{2}{3} \times \frac{1}{4} = 38.5$$

$$7 \times 7 - 38.5 = 10.5$$

$$14 \times 14 \times \frac{2}{3} \times \frac{1}{4} = 38.5$$

$$38.5 + 10.5 + 10.5 = 104.5$$

$$\text{Ans b) } 104.5 \text{ cm}^2$$

$$16 a) 12 \times 8 \times 5 = 480$$

$$\text{Ans. a) } 480 \text{ cm}^3$$

$$16 b) 8 \times 5 \times 2 = 80$$

$$12 \times 5 \times 2 = 120$$

$$8 \times 12 \times 2 = 192$$

$$192 + 120 + 80 = 392$$

$$\text{Ans. b) } 392 \text{ cm}^2$$

$$16 c) (5-2) \times (8-2) \times (12-2) = 180$$

$$\text{Ans. c) } 180$$

$$17 a) 5 + 3 = 8$$

$$2.60 + 0.8 = 3.4$$

$$134.2 - 2.4 \times 3 = 134.2 - 7.2 = 127$$

$$3 \times 2 + 3 \times 0.8 = 36$$

$$\text{Ans a) } 127$$

$$17 b) 3 \times 30 = 90$$

$$20 \times 3 - 117 = 57$$

$$6 \times 3 \times 4 = 72$$

$$\text{Ans. b) } 25$$

NAN HUA PRIMARY SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.
 (20 marks)

1 Round 56 354 to the nearest 1000.

- (1) 56 000
- (2) 56 300
- (3) 56 400
- (4) 57 000

2 In 18.624, which digit is in the tenths place?

- (1) 1
- (2) 2
- (3) 6
- (4) 8

3 Arrange the following numbers from the smallest to the largest.

7	7.3	7.03
---	-----	------

- | | <u>Smallest</u> | | | | <u>Largest</u> |
|-----|-----------------|---|------|---|----------------|
| (1) | 7 | , | 7.03 | , | 7.3 |
| (2) | 7.3 | , | 7 | , | 7.03 |
| (3) | 7.3 | , | 7.03 | , | 7 |
| (4) | 7.03 | , | 7.3 | , | 7 |

4 Express $\frac{1}{8}$ as a decimal.

- (1) 0.125
- (2) 1.25
- (3) 12.5
- (4) 125

5 In a marathon, there are 40 Malay participants, 70 Chinese participants and 30 Indian participants. What is the ratio of the number of Malay participants to the total number of Chinese and Indian participants?

- (1) 2 : 5
- (2) 2 : 7
- (3) 4 : 3
- (4) 4 : 7

6 John is thinking of a number. 40% of the number is 36. What is the number?

- (1) 9
- (2) 18
- (3) 54
- (4) 90

- 7 Aini spent \$40 in school in January. In February, she spent \$32 in school. Find the percentage decrease in her spending.

- (1) 8 %
- (2) 20 %
- (3) 25 %
- (4) 72 %

- 8 Simplify $9 + 5d - 3d + 4$.

- (1) $5 + 2d$
- (2) $5 + 8d$
- (3) $13 + 2d$
- (4) $13 + 8d$

- 9 Which of the following is the most likely mass of a calculator shown below?

- (1) 5 g
- (2) 15 g
- (3) 150 g
- (4) 1500 g



10 Which of the following is the same as 8050 cm?

- (1) 8 m 5 cm
- (2) 8 m 50 cm
- (3) 80 m 5 cm
- (4) 80 m 50 cm

11 Below are the operating hours of ABC Dental Clinic.

ABC Dental Clinic

Opens Monday to Friday
Closed on weekends

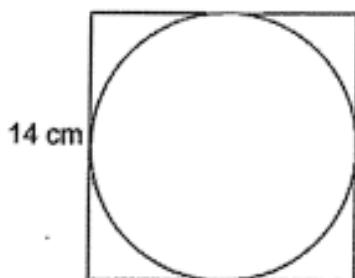
8.30 a.m. to 12.30 p.m.
2.30 p.m. to 4.30 p.m.
7 p.m. to 9.15 p.m.

How long is the clinic open on Wednesday?

- (1) 9 h 15 min
- (2) 8 h 15 min
- (3) 7 h 15 min
- (4) 6 h 15 min

- 12 The figure shows a circle inside a square of side 14 cm.

Find the area and perimeter of the circle. Take $\pi = \frac{22}{7}$.

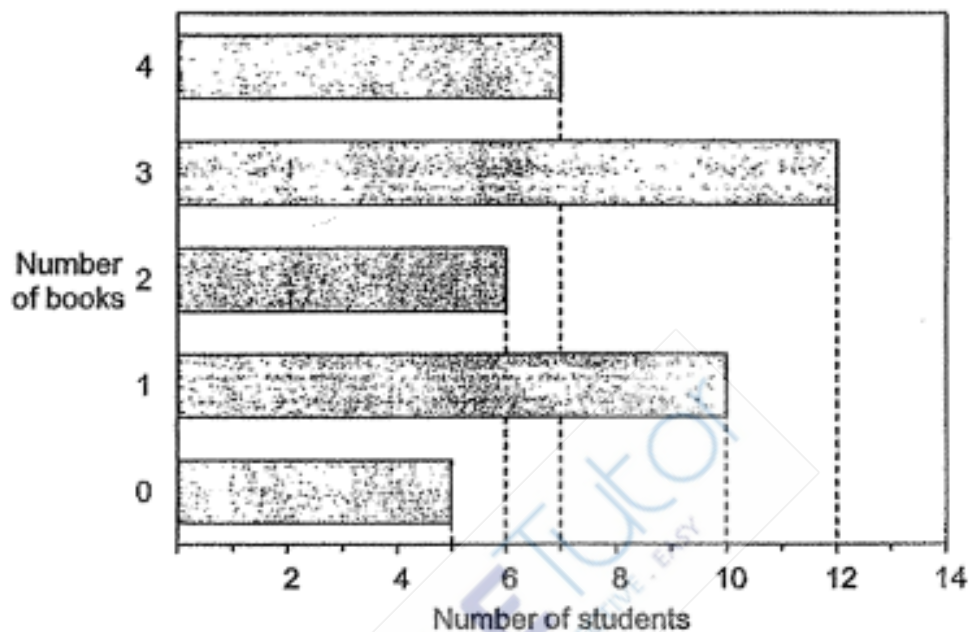


	<u>Area</u>	<u>Perimeter</u>
(1)	154 cm ²	44 cm
(2)	154 cm ²	22 cm
(3)	44 cm ²	154 cm
(4)	22 cm ²	154 cm

- 13 Mrs Lim had $\frac{2}{5}$ ℓ of syrup. She mixed the syrup with $\frac{9}{10}$ ℓ of water to make fruit punch. The fruit punch was poured into bottles, each containing $\frac{1}{5}$ ℓ. How much fruit punch was left?

- (1) $\frac{1}{10}$ ℓ
- (2) $\frac{1}{2}$ ℓ
- (3) $\frac{3}{10}$ ℓ
- (4) $\frac{11}{10}$ ℓ

- 14** The graph below shows the number of books that the students in Class 6A read in a week.



Find the total number of books read by students who read more than 2 books.

- (1) 19
- (2) 25
- (3) 64
- (4) 76

- 15 Halim's result slip was accidentally torn. His average mark for 4 subjects is 78. Part of his Mathematics and Science marks are missing. What is the greatest possible difference between Halim's Mathematics and Science mark?

English	80
Chinese	76
Mathematics	8
Science	7
Average	78

- (1) 19
(2) 16
(3) 10
(4) 4

Replace Page 7 Question 13 with the following question

- 13 Mrs. Lim had $\frac{1}{10}$ ℓ of syrup. She mixed the syrup with $\frac{4}{5}$ ℓ of water to make fruit punch. The fruit punch was poured into bottles, each containing $\frac{1}{5}$ ℓ. How much fruit punch was left?

(1) $\frac{1}{10}$ ℓ

(2) $\frac{1}{2}$ ℓ

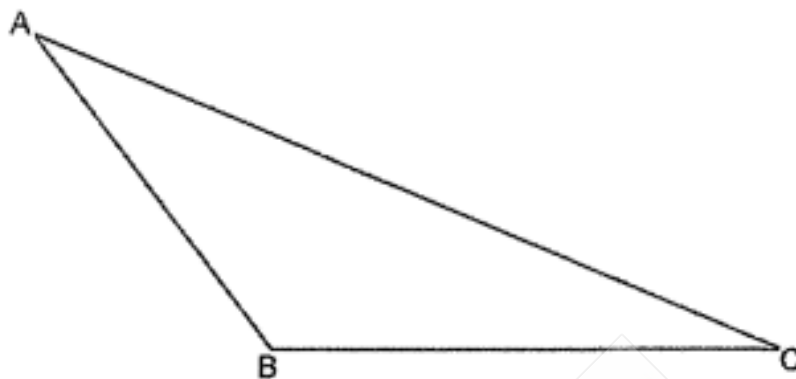
(3) $\frac{7}{10}$ ℓ

(4) $\frac{4}{5}$ ℓ



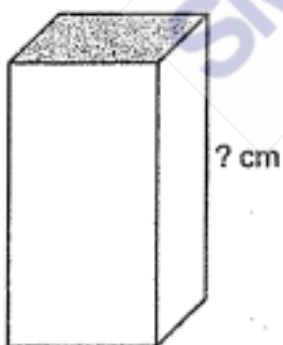
Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided.
 For questions which require units, give your answers in the units stated. (5 marks)

16 Measure and write down the size of $\angle ABC$.



Ans : _____ °

17 The volume of the cuboid is 96 cm^3 . The area of the shaded face is 8 cm^2 . Find the height of the cuboid.



Ans : _____ cm

18 Figure A and B are nets of solids.

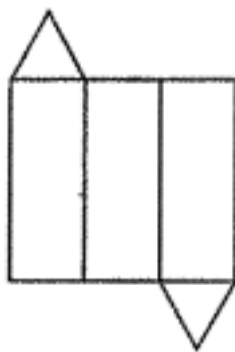


Figure A

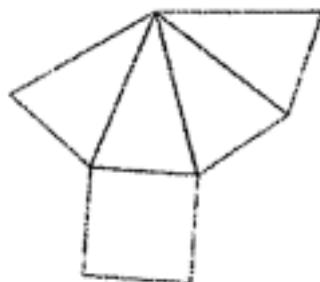


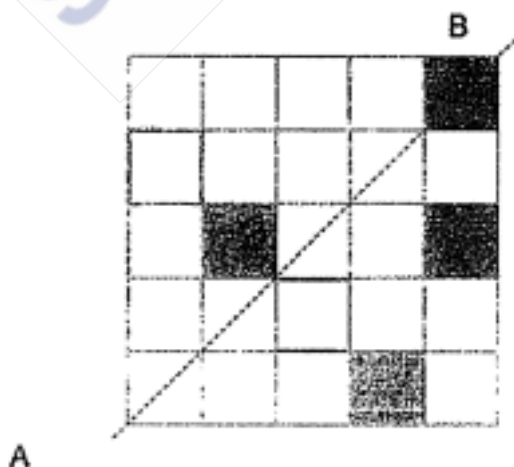
Figure B

Circle the words that describe the figures above.

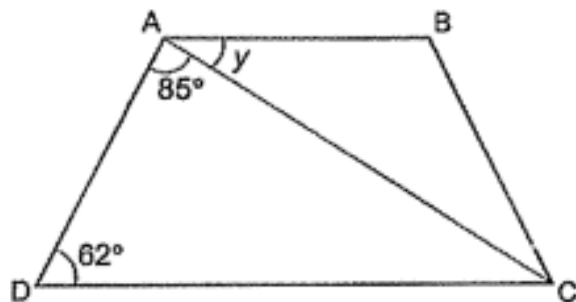
Figure A is a net of a (prism / pyramid).

Figure B is a net of a (prism / pyramid).

19 There are 4 shaded squares in the figure. Shade 3 more squares to form a symmetric figure with AB as the line of symmetry.



20 ABCD is a trapezium with AB parallel to DC. Find $\angle y$.



Ans : _____°

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For question which require units, give your answers in the units stated. (20 marks)

- 21 (a) Find the value of $\frac{2}{7} + 4$.

Give your answer in fraction in the simplest form.

Ans : (a) _____

- (b) Find the value of $2 + 9$.
Give your answer correct to 1 decimal place.

Ans : (b) _____

22 (a) Which fraction is smaller?

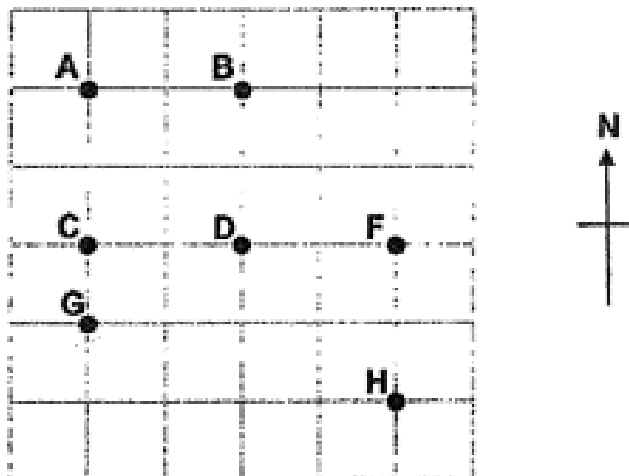
$\frac{4}{9}$	$\frac{2}{3}$
---------------	---------------

Ans : (a) _____

(b) Arrange $\frac{5}{9}$, $\frac{2}{3}$, $\frac{9}{8}$ in decreasing order.

Ans : (b) _____ , _____ , _____

23 The square grid shows the positions of points A, B, C, D, E, F, G and H.



(a) In which direction is point A from point D?

Ans : (a) _____

(b) Winnie is at point B facing East at first. She turns 135° clockwise. Which point is she facing after the turn?

Ans : (b) _____

- 24 A box contains red, green, blue and black markers.

$\frac{3}{8}$ of the markers are red. $\frac{3}{10}$ of the remaining markers are green. The number of blue and black markers are equal.

What fraction of the markers in the box are blue?

Ans : _____

- 25 John is t years old. His mother is 25 years older than him.

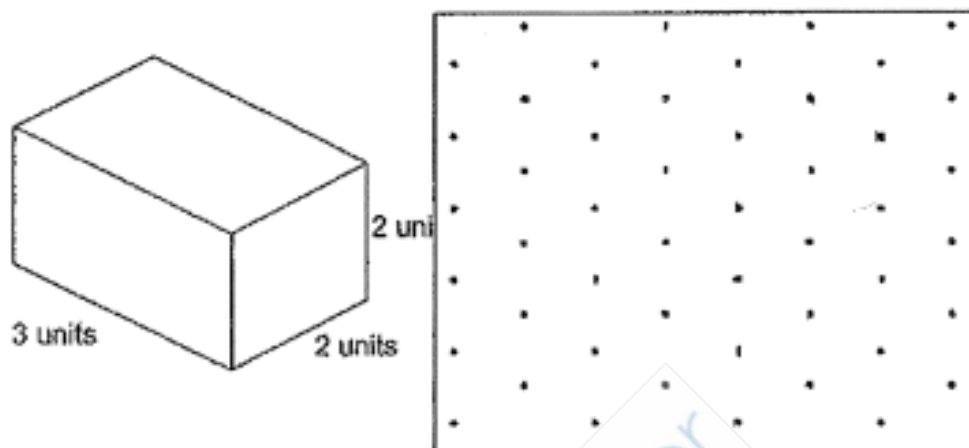
- (a) How old is John's mother?
Express your answer in terms of t .

Ans : (a) _____ years old

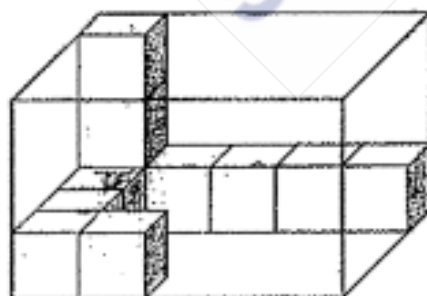
- (b) What is their total age when $t = 10$?

Ans : (b) _____ years old

- 26 Draw the following cuboid on the isometric grid.

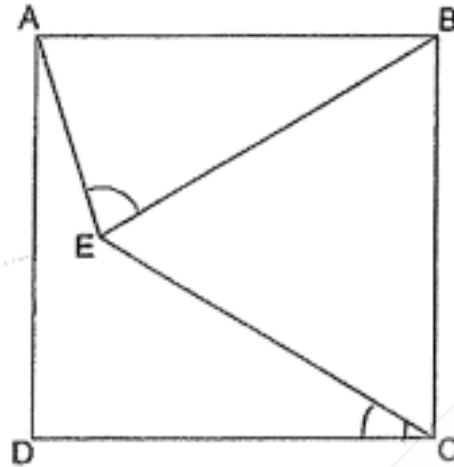


- 27 The figure shows a rectangular glass box filled with unit cubes. How many more unit cubes are needed to fill the box completely?



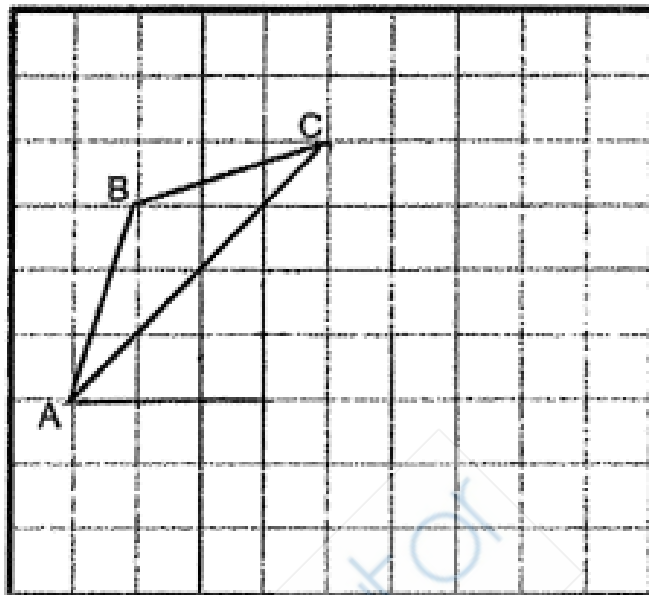
Ans : _____

- 28** In the figure, ABCD is a square. BCE is an equilateral triangle.
Find $\angle AEB$.



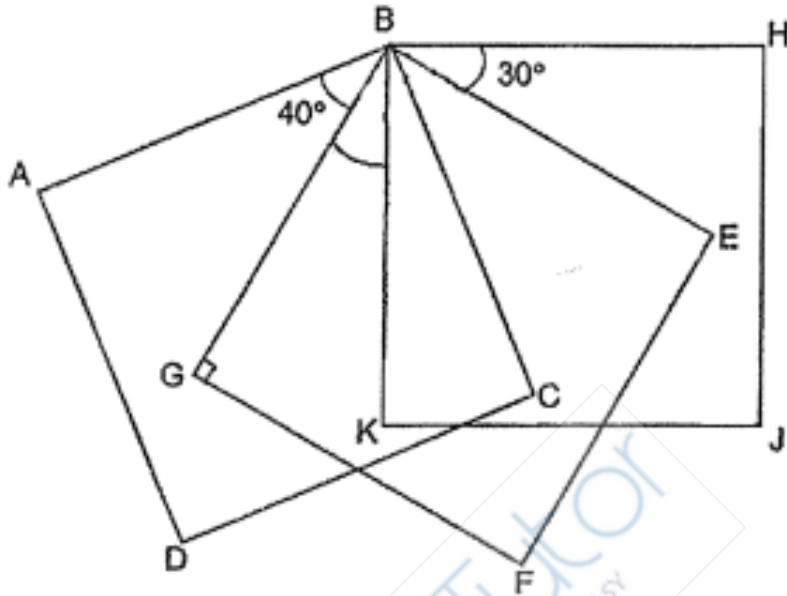
Ans : _____°

29 A triangle ABC is drawn on a square grid.



- (a) Using triangle ABC, draw rhombus ABCD.
- (b) Draw a triangle ACE such that area of ABC is $\frac{1}{3}$ of the area of ACE.
 Triangle ACE must not overlap with triangle ABC.

- 30** The figure below is made up of 3 identical squares, $ABCD$, $BEFG$ and $BHJK$.
 $\angle ABG = 40^\circ$ and $\angle HBE = 30^\circ$. Find $\angle KBC$.



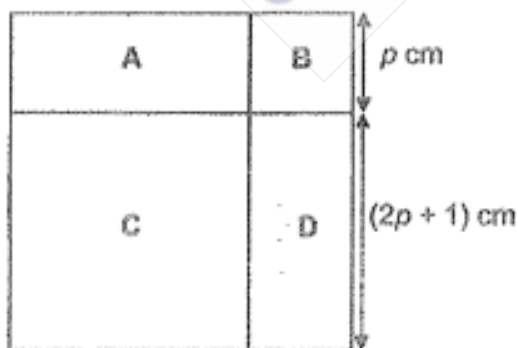
Ans : _____°

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the space provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 The mass of a watermelon is 4.82 kg. The mass of a pineapple is 2.65 kg lighter than the mass of the watermelon.
What is the total mass of the two fruits?

Ans: _____ kg

- 2 The figure shows a square divided into two rectangles A and D and two squares B and C. The perimeter of rectangle A is 14 cm.
Find the value of p .

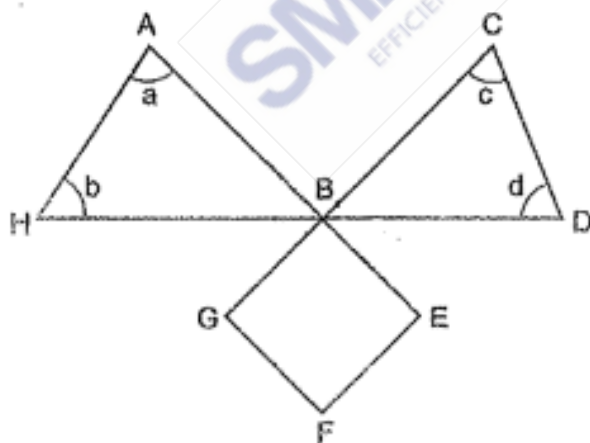


Ans: $p =$ _____ cm

- 3 Mrs Lee had a sum of money to spend. She spent $\frac{1}{2}$ of her money plus \$2 on a notebook. Next, she spent $\frac{1}{4}$ of her remaining money on a drink and she was left with \$9. How much money did she have at first?

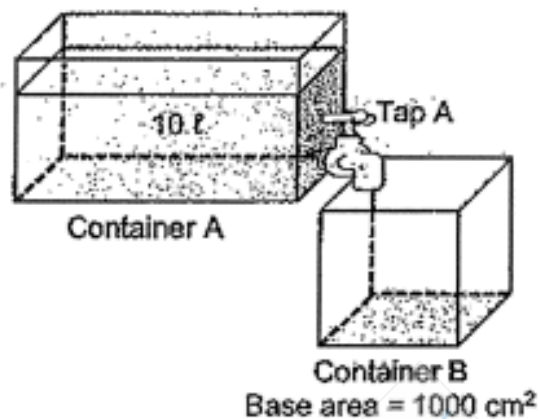
Ans: \$ _____

- 4 The figure below is made of a square BEFG and 2 triangles ABH and CBD. ABE, HBD and GBC are straight lines. Find the value of $\angle a + \angle b + \angle c + \angle d$.



Ans: _____°

- 5 The figure below shows 2 containers, A and B.
 Container A contains 10 ℓ of water.
 Container B has a base area of 1000 cm² and was empty at first.



When Tap A is turned on, the height of water in container B increases by 2 cm per minute. What is the volume of the water left in container A after Tap A is turned on for 2 minutes?

Ans: _____ ℓ

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

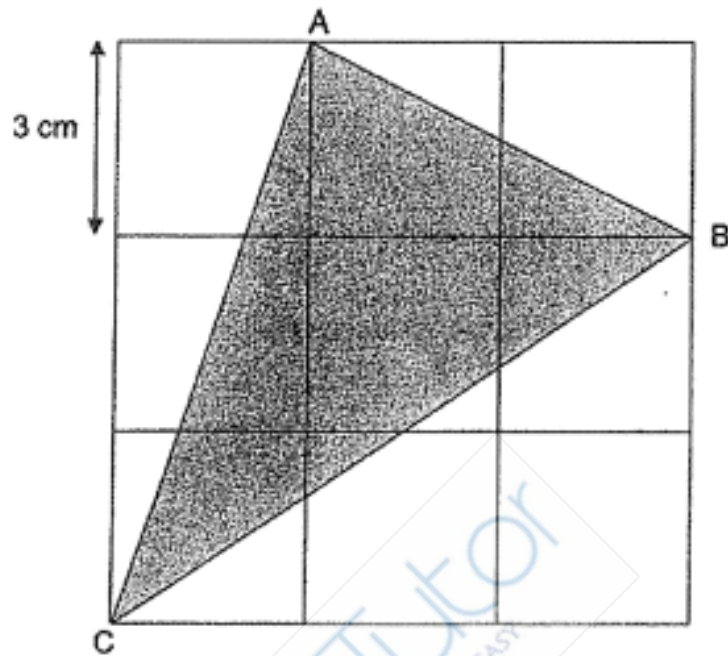
- 6 Muffins are sold in boxes of 6, 8 and 15. John bought 12 boxes of 6 muffins and some boxes of 8 and 15 muffins. He bought a total of 188 muffins. How many boxes of 15 muffins did John buy?

Ans: _____ [3]

- 7 A red T-shirt is sold at a 15% discount and a blue T-shirt at a 30% discount. Both shirts have the same price before the discount. The discounted price of the red T-shirt is \$6 more than the discounted price of the blue T-shirt. What is the price of a red T-shirt before the discount?

Ans: _____ [3]

- 8 The figure below is made up of 9 squares of sides 3 cm. Triangle ABC is shaded.



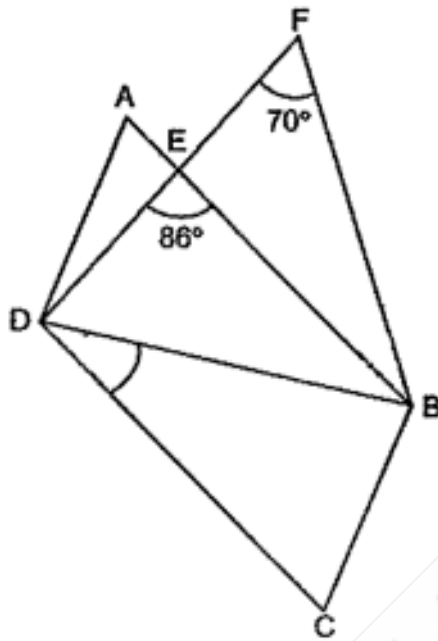
- (a) Find the area of unshaded part.

Ans: (a) _____ [2]

- (b) Find the area of shaded part.

Ans: (b) _____ [1]

- 9 In the figure below, ABCD is a parallelogram and DBF is an isosceles triangle with $FD = FB$. $\angle DFB = 70^\circ$ and $\angle DEB = 86^\circ$. Find $\angle BDC$.





Ans: _____ [3]

- 10 The ratio of the number of apples to the number of pears in a supermarket was 5 : 6. $\frac{1}{4}$ of the apples and 171 pears were rotten. The rotten apples and pears were thrown away. In the end, there was an equal number of apples and pears left. How many apples were there at first?



Ans: _____ [4]

- 11 James bought key chains and trading cards at the prices shown below.

	
<p>Key Chain 4 for \$17</p>	<p>Trading Card 3 for \$8</p>

He bought an equal number of keychains and trading cards. He spent \$76 more on keychains than trading cards. How many key chains did he buy?

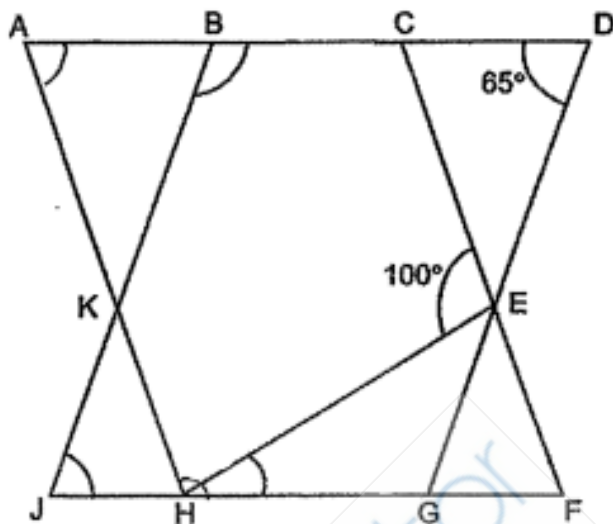
Ans: _____ [3]

- 12** Town A and B are 400 km apart. Alex left Town A for Town B travelling at a constant speed of 65 km/h. At the same time, Ben left Town B for Town A, travelling at a constant speed of 85 km/h. Both of them took the same route. How long did they take to pass each other? Leave your answers in hours and minutes.



Ans: _____ [3]

- 13** In the figure below, $ACFH$ and $BDGJ$ are identical parallelograms.
 EFH is a triangle. $ABCD$ and $JHGF$ are straight lines.
 Given that $\angle CDE = 65^\circ$ and $\angle CEH = 100^\circ$,



- (a) Find $\angle BJH$.

Ans: (a) _____ [1]

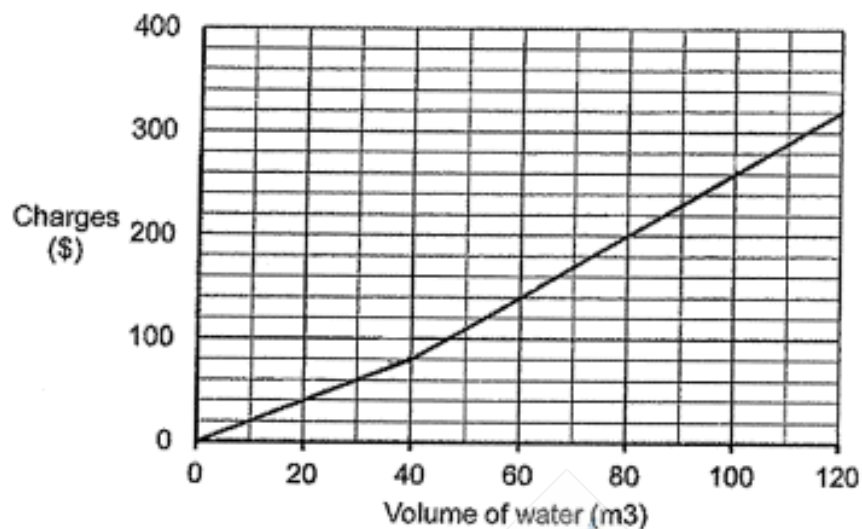
- (b) Find $\angle DBJ$.

Ans: (b) _____ [1]

- (c) Find $\angle EHF$.

Ans: (c) _____ [2]

14. The graph shows the charges for water usage.



- (a) Find the charges when 40 m³ of water is used.

Ans: (a) _____ [1]

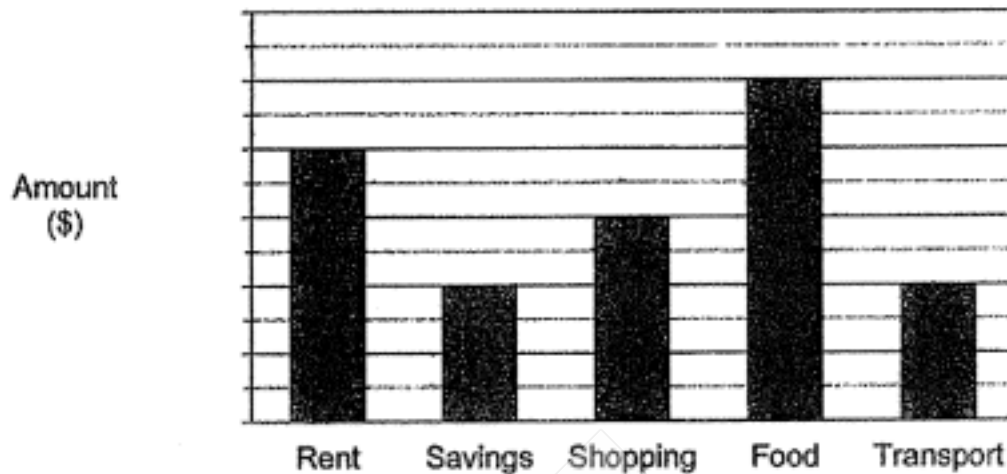
- (b) The Lee family paid \$260 for the volume of water used in July. What was the volume of water used?

Ans: (b) _____ [1]

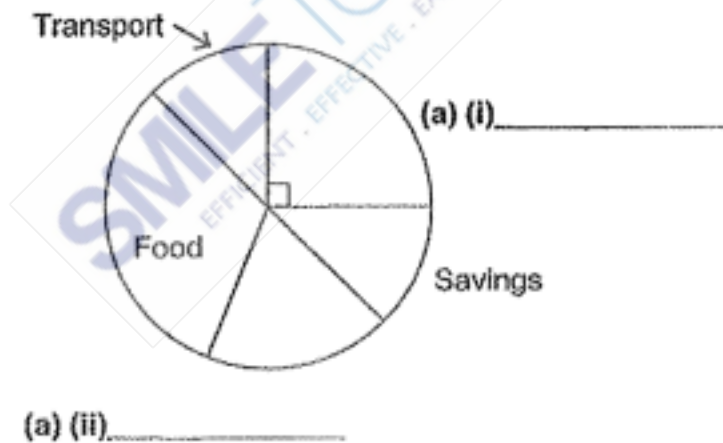
- (c) How much is the charge for every cubic metre of water after 40 m³?

Ans: (c) _____ [2]

- 15 The bar graph below represent how Bryan used his money in September. The amount of money is not shown on the scale in the bar graph below.



How Bryan used his money in September is also represented in the pie chart below.



- (a) Label the pie chart by writing 'Shopping' and 'Rent' in the blanks above.
[1m]

- (b) Each of the statements below is either true, false or impossible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

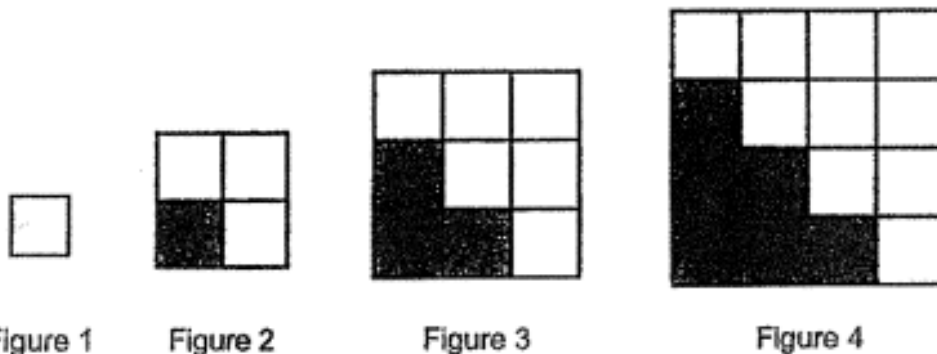
Statement	True	False	Not possible to tell
The amount spent on rent is twice the amount spent on transport.			
The ratio of the amount spent on shopping to the amount spent on food is 3 : 4.			

[2]

- (c) What fraction of his money did he spend on shopping?

Ans: (c) _____ [2]

- 16** Mrs Chan used white and grey coloured papers to form figures that follow a pattern as shown below.



The table below shows the number of white and grey coloured papers for the first four figures.

- (a) Fill in the table for Figure 5.

Figure Number	1	2	3	4	5
Number of white coloured paper	1	3	6	10	
Number of grey coloured paper	0	1	3	6	
Total number of paper	1	4	9	16	

[3]

- (b) How many white and grey coloured papers are there in Figure 20 altogether?

(b) _____ [1]

- (c) A figure in the pattern has a total of 1444 white and grey coloured papers. What is the Figure Number?

(c) _____ [1]

- 17 Figure A and B are made up of identical quarter circles.

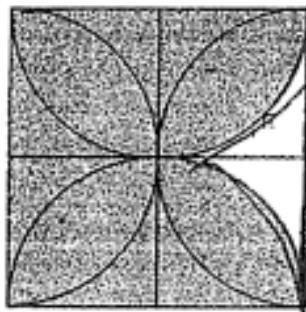


Figure A

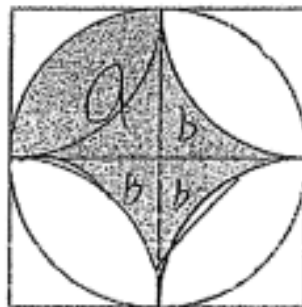


Figure B

The perimeter of the shaded part of Figure A is 140 cm more than the perimeter of the unshaded part of A.

Find the area of the total shaded part in Figure B. Take $\pi = \frac{22}{7}$.

Ans: _____ [5]

End of Paper

ANSWER SHEET

Paper 1

1)	1	6)	4	11)	2
2)	3	7)	2	12)	1
3)	1	8)	3	13)	1
4)	1	9)	3	14)	3
5)	1	10)	4	15)	2

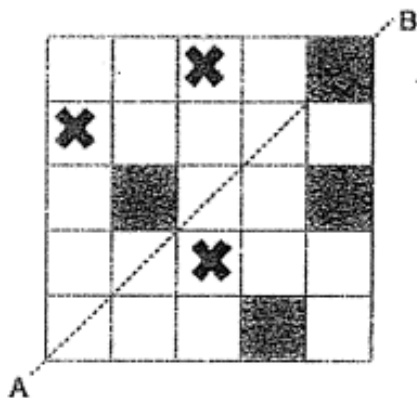
Section B (20 marks)

Questions 16 to 20 carry 1 mark each.

Questions 21 to 30 carry 2 marks each.

(For Q21 to Q30, 1 mark will be awarded for the final method mark even if the answer is wrong. A2 will be awarded for the correct answers as some pupils might do the questions mentally.)

16)	$127 \pm 1^\circ$
17)	12
18)	Figure A → prism Figure → pyramid
19)	Refer to picture
20)	33



Note: Q21 to 30 carry 2 marks each

21. a) $\frac{1}{14}$

b) 0.2

22. a) $\frac{4}{9}$

b) $\frac{9}{8}, \frac{2}{3}, \frac{5}{9}$

23. a) North- West

b) C

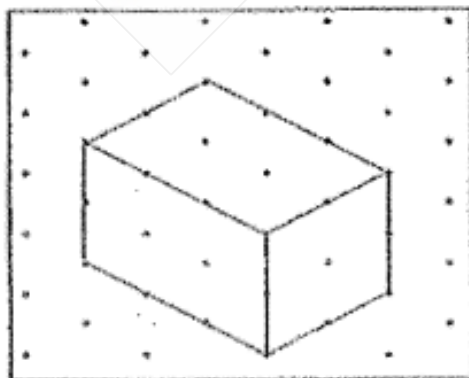
24. $\frac{7}{10} \times \frac{5}{8} = \frac{7}{16}$ (blue and black)

$\frac{7}{16} \div 2 = \frac{7}{32}$

25. a) $(t + 25)$ years old or $(25 + t)$ years old

b) 45 years

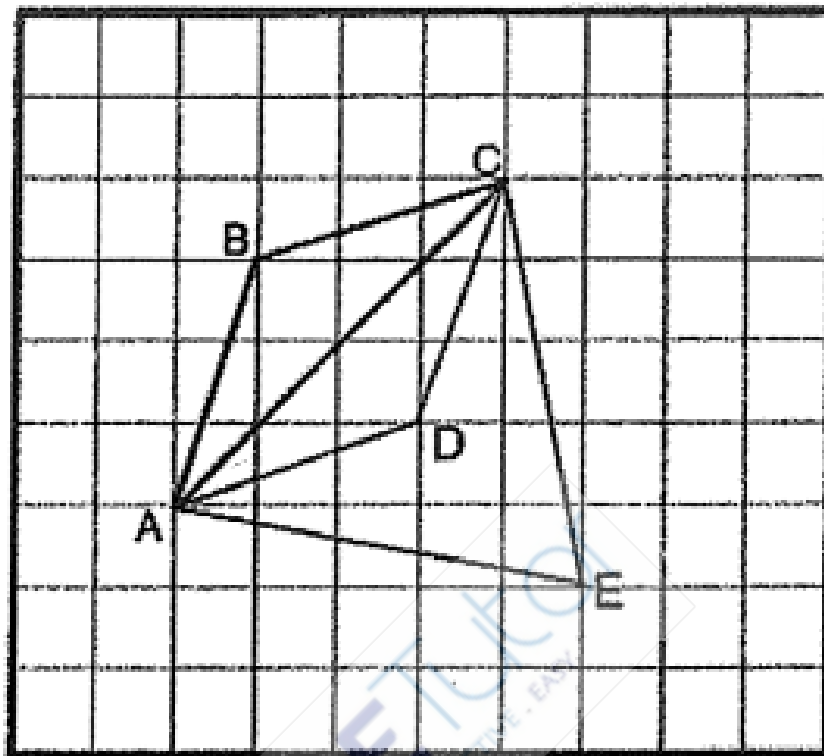
26.



27. $5 \times 4 \times 3 = 60$
 $60 - 11 = 49$

28. $90^\circ - 60^\circ = 30^\circ$
 $180^\circ - 30^\circ = 150^\circ$
 $150^\circ \div 2 = 75^\circ$

29.



30. $\angle GBK = \angle HBE = 30^\circ$

$$\angle KBC = 90^\circ - 40^\circ - 30^\circ = 20^\circ$$

Paper 2

1.	$4.82 - 2.65 = 2.17$ $4.82 + 2.17 = 6.99$								
2.	$2p + 1 + 2p + 1 + p + p = 6p + 2$ $6p + 2 = 14$ $p = (14 - 2) \div 6$ $= 2$								
3.	$9 + 3 = 3$ $2 + 3 \times 4 = 14$ $14 \times 2 = 28$								
4.	$180^\circ + 180^\circ = 360^\circ$ (sum of 2 triangles) $360^\circ - 90^\circ = 270^\circ$								
5.	$2 \times 2 \times 1 = 4$ $10 - 4 = 6\text{¢}$								
6.	$12 \times 6 = 72$ $188 - 72 = 116$ Using guess and check method, <table border="1"><tr><td>6 muffins</td><td>8 muffins</td><td>15 muffins</td><td>total</td></tr><tr><td>$12 \times 6 = 72$</td><td>$7 \times 8 = 56$</td><td>$4 \times 15 = 60$</td><td>188</td></tr></table>	6 muffins	8 muffins	15 muffins	total	$12 \times 6 = 72$	$7 \times 8 = 56$	$4 \times 15 = 60$	188
6 muffins	8 muffins	15 muffins	total						
$12 \times 6 = 72$	$7 \times 8 = 56$	$4 \times 15 = 60$	188						
7.	$85\% - 70\% = 15\%$ $15\% \rightarrow \$6$ $5\% \rightarrow \$2$ $100\% \rightarrow \$2 \times 20 = \40								
8.	a) $(\frac{1}{2} \times 3 \times 9) + (\frac{1}{3} \times 3 \times 6) + (\frac{1}{2} \times 6 \times 9) = 49.5 \text{ cm}^2$ b) $9 \times 9 = 81$ $81 - 49.5 = 31.5 \text{ cm}^2$								
9.	$\angle FDB = (180^\circ - 70^\circ) \div 2$ $= 55^\circ$ $\angle BDC = \angle EBD = 180^\circ - 55^\circ - 86^\circ$ $= 39^\circ$								

10.	$A : P = 5 : 6$ $= 20 : 24$ $RA = 20 \times \frac{1}{4} = 5$ $RP = 24 - 15 = 9$ 9 units = 171 1 unit = 19 20 units = 19×20 $= 380$
11.	1 set of 12 keychains $\rightarrow \$17 \times 3 = \51 1 set of 12 trading cards $\rightarrow \$8 \times 4 = \32 Difference of 1 set = $\$51 - \$32 = \$19$ $\$76 \div \$19 = 4$ $4 \times 12 = 48$
12.	$65 + 85 = 150$ $400 \div 150$ $= 2\frac{2}{3} \text{ h} = 2\text{h } 40 \text{ min}$
13. (a)	$\angle BJH = 65^\circ$
(b)	$\angle DBJ = 180^\circ - 65^\circ = 115^\circ$
(c)	$\angle EHF = 100^\circ - 65^\circ = 35^\circ$
14. (a)	\$90
(b)	100 m^3
(c)	M1 for identifying the correct corresponding x and y value $(200 - 140) / (80 - 60)$ $= \$3$

15. (ai)	Rent
(aii)	Shopping
(bi)	true
(bii)	false
(c)	$\frac{6}{32} = \frac{3}{16}$
16. (a)	(i) 15 (ii) 10 (iii) 25
(b)	$(20 \times 20) = 400$
(c)	$38 \times 38 = 1444$
17.	$4r = 140$ $35 \times 35 = 1225$ $\frac{1}{4} \times \frac{22}{7} \times 35 \times 35 = 962.5$ $1225 - 962.5 = 262.5$ $35 \times 35 + 962.5 = 1750 \text{ cm}^2$

NAN HUA PRIMARY SCHOOL SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice and shade your answer (1, 2, 3 or 4) on the Optical Answer Sheet.
(20 marks)

1. The cost of a car, correct to the nearest thousand, is \$150 000.
Which one of the following could be the actual cost of the car?

(1) \$148 599
(2) \$149 499
(3) \$150 499
(4) \$150 599

2. Which one of the following is **not** a common factor of 32 and 64?

(1) 1
(2) 16
(3) 64
(4) 4

3. Express $1\frac{2}{25}$ as a decimal.

(1) 1.02
(2) 1.08
(3) 1.2
(4) 1.8

4. Which one of the following is the same as $\frac{5}{14}$?

(1) $\frac{1}{5} \times 14$

(2) $\frac{1}{14} \times 5$

(3) $\frac{2}{5} \times 35$

(4) $\frac{5}{7} \times 14$

5. Find the value of $\frac{2}{9} \times \frac{3}{10}$.

(1) $\frac{1}{15}$

(2) $\frac{5}{19}$

(3) $\frac{6}{19}$

(4) $\frac{20}{27}$

6. How many $\frac{3}{8}$ s are there in 6 wholes?

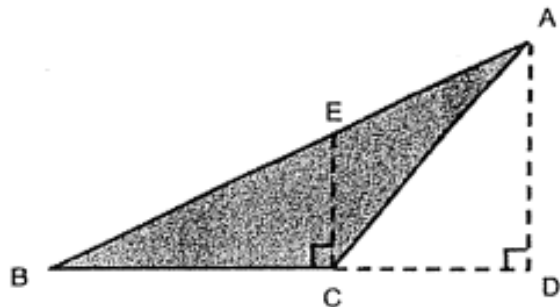
(1) 16

(2) 18

(3) 24

(4) 48

7. Given that the base of triangle ABC is BC, find the height that is related to the base BC.



- (1) AC
- (2) AD
- (3) AB
- (4) CE

8. How many of the following letters has/have only 1 line of symmetry?

M

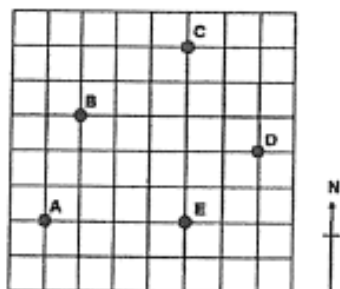
A

N

Y

- (1) 1
- (2) 2
- (3) 3
- (4) 4

9. In the square grid below, Point _____ is north-east of Point E.



- (1) A
 - (2) B
 - (3) C
 - (4) D
10. At a seminar, the number of male participants was $\frac{5}{7}$ of the number of female participants. What is the ratio of the number of female participants to the total number of participants?
- (1) 5 : 7
 - (2) 7 : 5
 - (3) 5 : 12
 - (4) 7 : 12

11. John had some fruit juice. He drank $\frac{1}{4}$ of it and his two sisters shared the remainder equally. What fraction of the original amount of fruit juice did each of his sisters get?

(1) $\frac{3}{4}$

(2) $\frac{1}{2}$

(3) $\frac{3}{8}$

(4) $\frac{1}{8}$

12. Mrs Tan had 6 kg of flour. She used 4 kg and 800 g to make muffins. How much flour was left? Give your answer in kg.

(1) 1.002 kg

(2) 2 kg

(3) 1.02 kg

(4) 1.2 kg

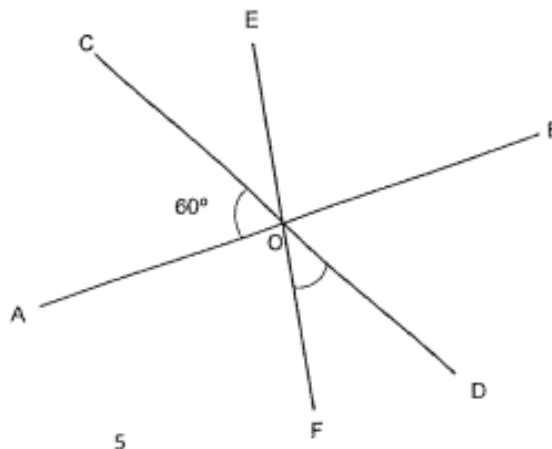
13. In the figure below, AB, CD and EF are straight lines. $\angle AOC$ is 60° . $\angle BOE$ is twice of $\angle FOD$. What is $\angle FOD$?

(1) 20°

(2) 30°

(3) 40°

(4) 60°



14. A bus can either take 48 children or 32 adults. If there are already 25 children and 6 adults on the bus, how many more children can be on the bus?

- (1) 9
- (2) 14
- (3) 23
- (4) 34

15. The table below shows the number of students in a Primary 6 class. Some of the information is missing.

	With spectacles	Without spectacles	Total
Boys	10		
Girls	15		20
Total			38

Based on the given information, which one of the following statements is correct?

- (1) $\frac{1}{4}$ of the girls are without spectacles.
- (2) 60% of the students with spectacles are boys.
- (3) There are more girls than boys who are without spectacles.
- (4) The ratio of the number of girls to the number of boys in the Primary 6 class is 9 : 10.

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. [5 marks]

16. Find the value of $44 - 12 + 4 + 2 \times 4$.

Ans : _____

17. What is the third common multiple of 5 and 8?

Ans : _____

18. Arrange the following fractions from the greatest to the smallest.

$$\frac{5}{9}, \frac{5}{12}, \frac{5}{6}$$

Ans: _____, _____, _____

(greatest)

19. The table shows the number of trading cards that Aini, Bala and Caili have.

Name	No. of trading cards
Aini	18
Bala	12
Caili	24

Using the information from the table, complete the picture graph by drawing the correct number of triangles for Aini and Bala.

Aini and Bala	
Caili	△ △ △ △

Each △ represents 6 trading cards.

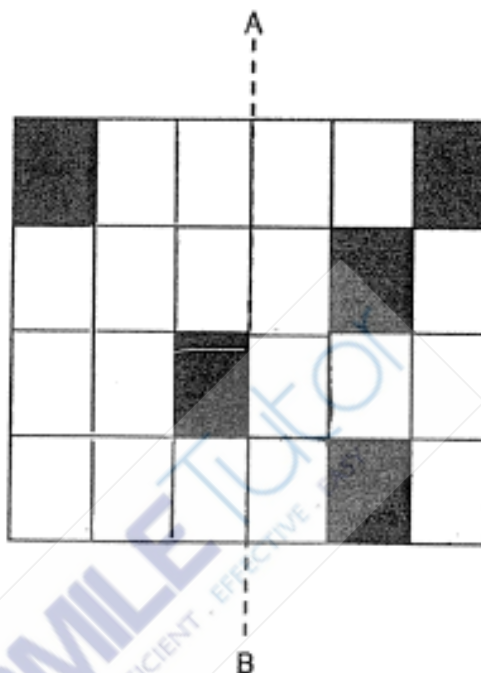
20. A concert started at 9.25 a.m. and ended at 12.05 p.m..

Find the duration of the concert.

Ans : _____ h _____ min

Questions 21 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. [20 marks]

21. In the figure below, AB is the line of symmetry. Shade 3 more rectangles to make it symmetrical.



22. Using the line AB provided below, construct $\angle BAC = 80^\circ$.



23. The ratio of Michael's age to his daughter's age is 2 : 1.

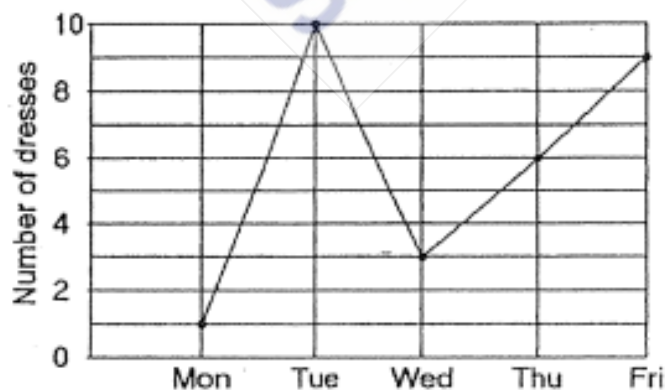
10 years ago, the ratio of Michael's age to his daughter's age was 8 : 3.
How old is Michael now?

Ans : _____

24. Mdm Lim buys some boxes of coffee powder and some packets of sugar that weigh 21 kg altogether.
When 6 packets of sugar are removed, the mass becomes 17.4 kg.
What is the mass of each packet of sugar?

Ans : _____ kg

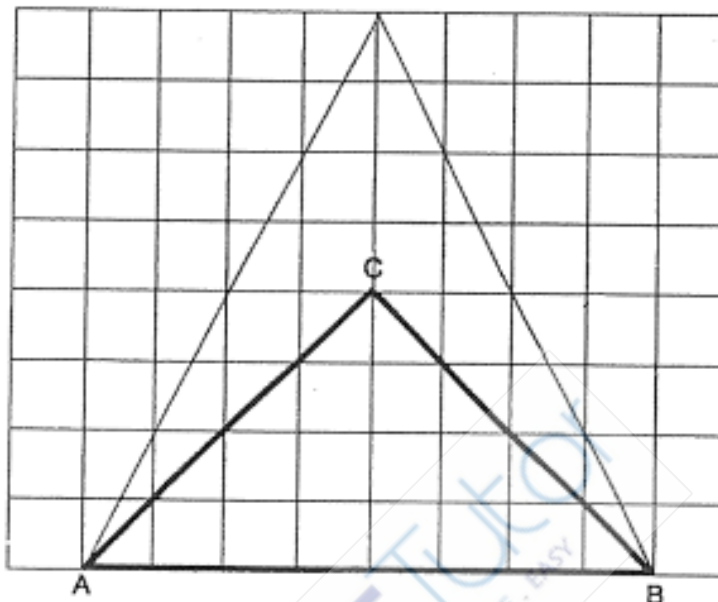
25. The line graph shows the number of dresses sold from Monday to Friday.



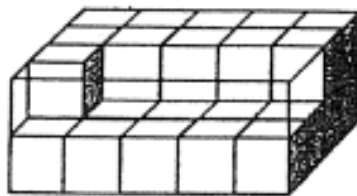
What was the percentage decrease in the number of dresses sold on Wednesday compared to the number of dresses sold on Tuesday?

Ans : _____

26. A triangle, ABC, is drawn on the square grid.
 Draw a triangle, ABD, which is twice the area of Triangle ABC.

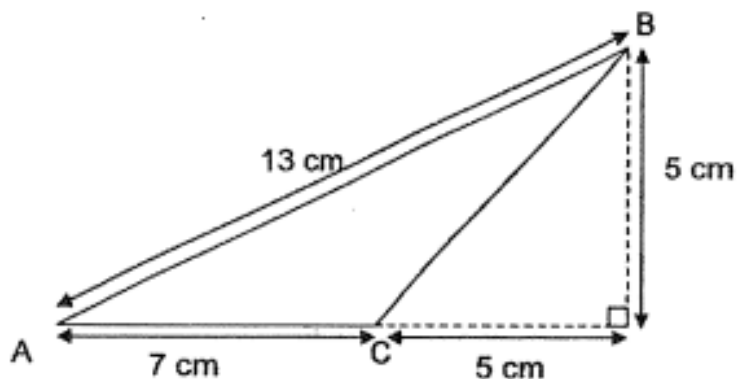


27. The figure shows a rectangular glass tank partly filled with identical cubes.
 Amanda poured 243 cm^3 water into the tank to fill it to the brim.
 Find the volume of a cube.



Ans : _____ cm^3

28. Find the area of triangle ABC as shown below.



Ans : _____ cm²

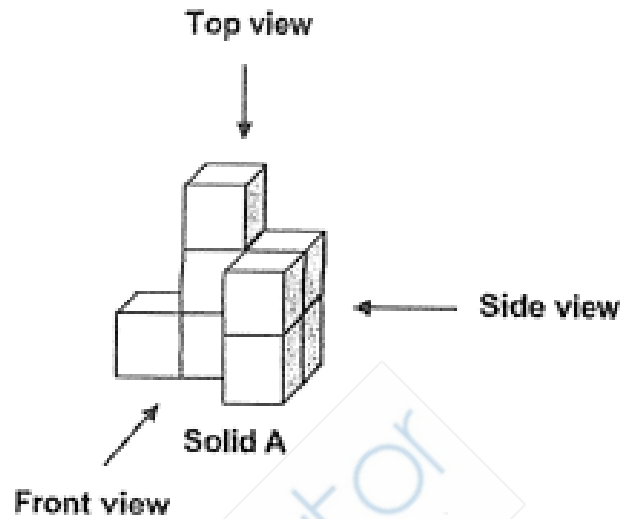
29. The average mark of a group of 6 students is 88.

Mathew, who scores 72 mark, joins the group.

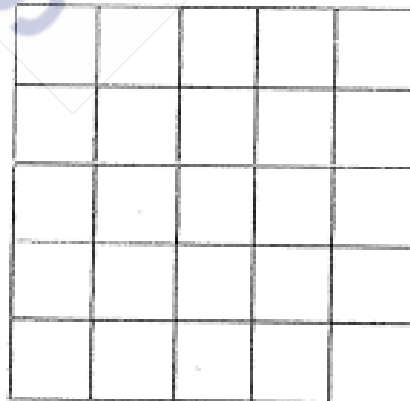
Each of the statements below is either true, false or impossible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
The average mark will decrease when Mathew joins the group.			
Each of the 6 students scores more than Mathew.			

30. Solid A is made of 1-cm cubes.



Draw on the square grid below the top view of Solid A.



END OF PAPER 1

Paper 2 (55 marks)

Questions 1 to 5 carry 2 marks each. Show your workings clearly and write your answer in the space provided. For questions which require units, give your answers in the units stated. (10 marks)

1. The table shows the results of 4 swimmers in a competition.

What is their average timing?

Name	Timing
Abigail	60 s
Ben	50 s
Cleo	58 s
David	55 s

Ans: _____ s

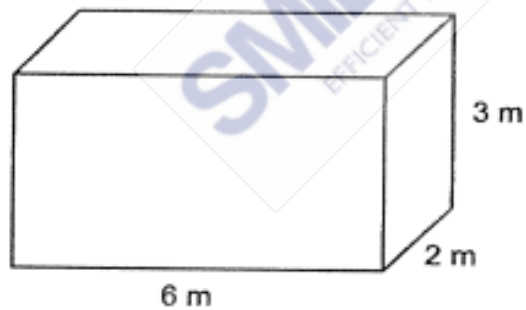
2. The ratio of the number of boys to the number of girls at a carnival was 4 : 5 at first. What was the new ratio of the number of boys to the number of girls at the carnival after $\frac{1}{2}$ of the number of boys left the carnival?

Ans: _____

3. A machine prints 350 pieces of paper in 21 minutes. At this rate, how long does the machine take to print 150 pieces of paper?

Ans: _____ min

4. A water tank measuring 6 m by 2 m by 3 m is completely filled with water. What is the volume of water in the tank?



Ans: _____ m³

5. At first, the average mass of a group of students was 28 kg. A new boy with a mass of 48 kg joined them and the new average mass of the students was increased to 33 kg. Find the number of students in the group at first.

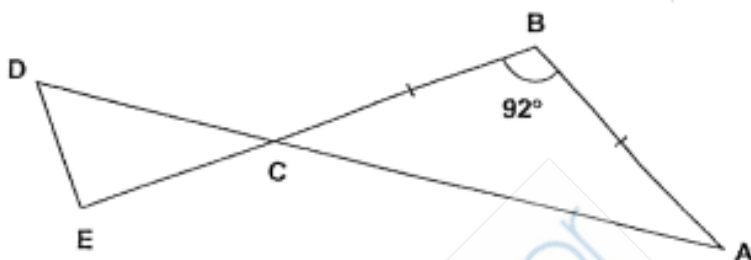
Ans: _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. In the figure below, ABC is an isosceles triangle.

ACD and BCE are straight lines. $\angle ABC = 92^\circ$

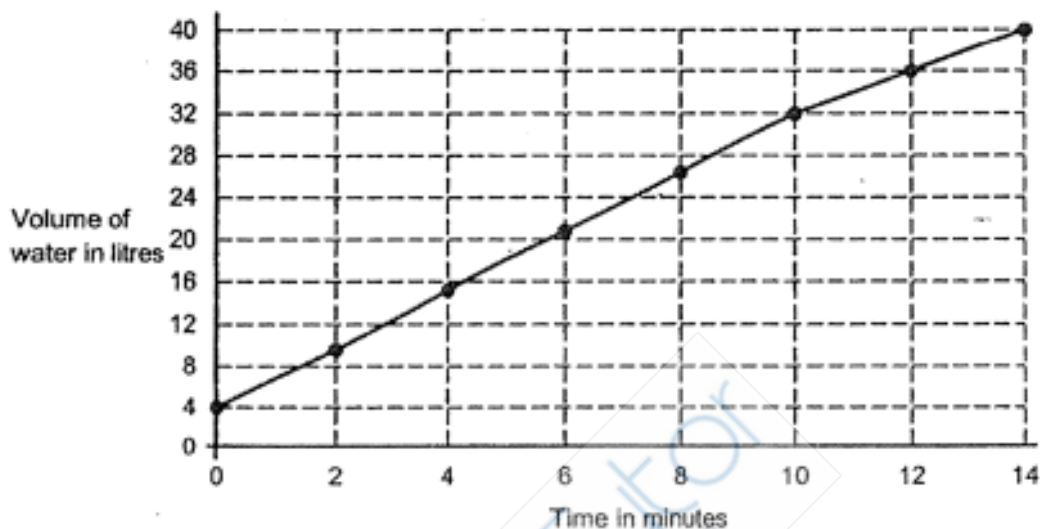
Find the sum of $\angle CED$ and $\angle CDE$.



Ans: _____ [3]

7. The line graph below shows the volume of water in a tank over a period of 14 minutes.

(a) What is the volume of water in the tank at the end of the 14 minutes? (Give your answer in litres)

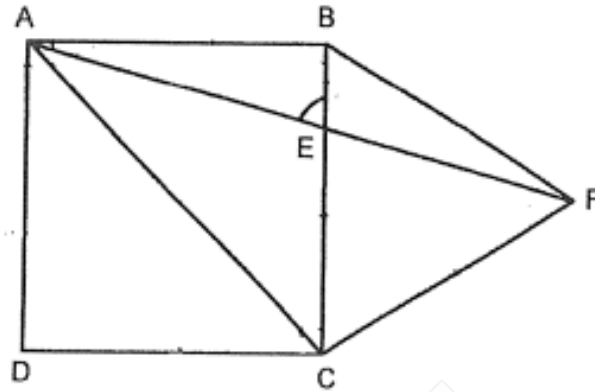


Ans: (a) _____ [1]

- (b) Next, water is drained out from the tank till it is completely empty. How long does it take for the tank to be completely empty if water is drained out at a rate of 0.8 litre per minute?

Ans: (b) _____ [2]

8. In the figure below, ABCD is a square and BCF is an equilateral triangle. AEF is a straight line. Find $\angle AEB$.

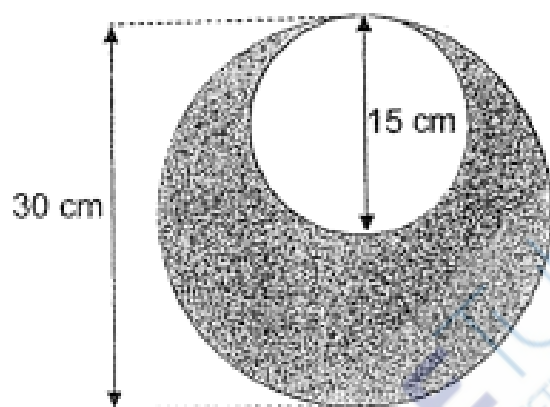


Ans: _____ [3]

9. The figure is formed by two circles.

The diameter of the bigger circle is 30 cm and the diameter of the smaller circle is 15 cm.

Use the calculator value of π to find the perimeter of the shaded part.
Round your answer to 2 decimal places.



Ans: _____ [3]

10. A survey was conducted to find out the price of eggs sold at a supermarket.
- (a) The price of a tray of 10 eggs was \$2.40 last year. It increased to \$3 this year.

What was the percentage increase in the price of 10 eggs this year compared to last year?

Ans: (a) _____ [1]

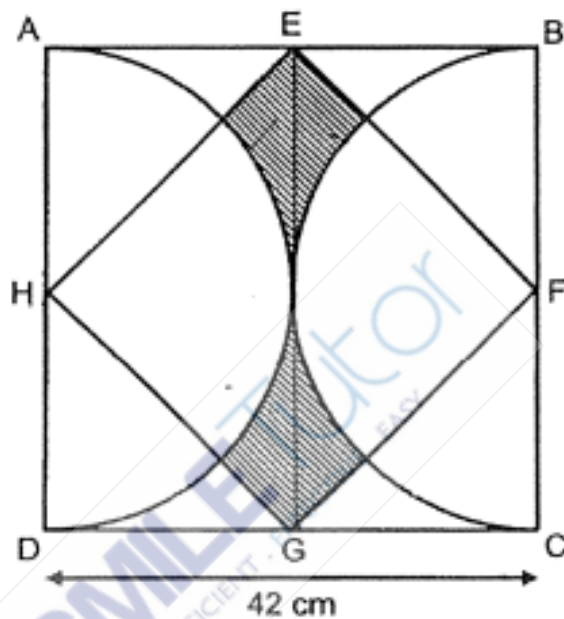
- (b) There was a 44% increase in the price of a tray of 30 eggs this year compared to last year.
If the price of a tray of 30 eggs was \$5 last year, what was the price this year?

Ans: (b) _____ [2]

11. The figure is made up of 2 squares, ABCD and EFGH, and 2 identical semicircles. E is the mid-point of AB and G is the mid-point of DC.

Find the total area of the shaded parts.

(Take $\pi = \frac{22}{7}$)



Ans: _____ [4]

12. Mdm Wati bought a total of 60 pears and mangoes. If she exchanged each mango for 3 pears, she would have 116 pears in all.

(a) How many pears did she buy?

Ans: (a) _____ [3]

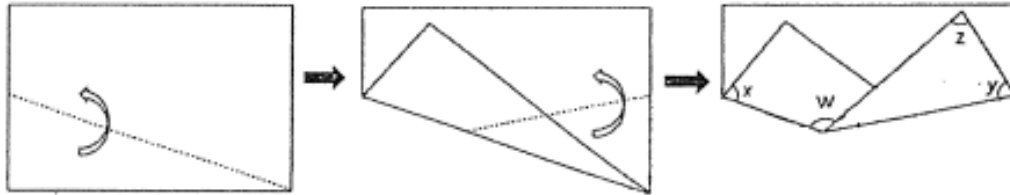
(b) How many mangoes did she buy?

Ans: (b) _____ [1]

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13. A rectangular piece of paper is folded twice along the dotted lines as shown in the figures below.



Given that $\angle y = 76^\circ$ and $\angle z = 75^\circ$, find


- (a) $\angle x$

Ans: (a) _____ [2]

- (b) $\angle w$

Ans: (b) _____ [2]

14. The table below shows the number of books read by each student in a class of 35 students. One of the numbers in the table is covered by an ink blot.

Number of books read by each student	0	6	
Number of students	15	9	11

The average number of books read by the students in the class is 5.

What is the number covered by the ink blot?

Ans: _____ [4]

15. Isaac and Caleb baked a total number of 1085 muffins altogether. After both sold an equal number of muffins, Isaac had $\frac{1}{4}$ of his muffins and Caleb had $\frac{1}{5}$ of his muffins left. Caleb donated his remaining muffins to charity.
- (a) How many muffins were sold altogether?

Ans: (a) _____ [2]

- (b) How many muffins did Caleb donate to charity?

Ans: (b) _____ [2]

16. Squares are used to form the pattern below.



Figure 1



Figure 2

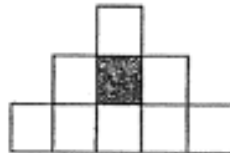


Figure 3



Figure 4

(a) What is the total number of squares in Figure 5?

Ans: (a) _____ [1]

(b) Which figure is made up of 40 white squares?

Ans: (b) _____ [2]

(c) How many shaded squares are there in Figure 30?

Ans: (c) _____ [2]

17. Mdm Ng loves to watch movies. She downloads 80 movies every month.

(a) Study the table below and help Mdm Ng decide which plan is cheaper for her to subscribe.

	Plan A	Plan B
Monthly subscription	\$20 (Free 10 movies)	\$27 (Free 20 movies)
Charge per downloaded movie	\$2.50	\$3.00

Ans: (a) _____ [3]

(b) There is an additional 7% GST on the plan that Mdm Ng is paying. How much does she have to pay for the plan including GST?

Ans: (b) _____ [2]

-----End of Paper-----

ANSWER SHEET

Paper 1

Booklet A (20 marks)

1)	3	6)	1	11)	3
2)	3	7)	2	12)	4
3)	2	8)	3	13)	3
4)	2	9)	4	14)	2
5)	1	10)	4	15)	1

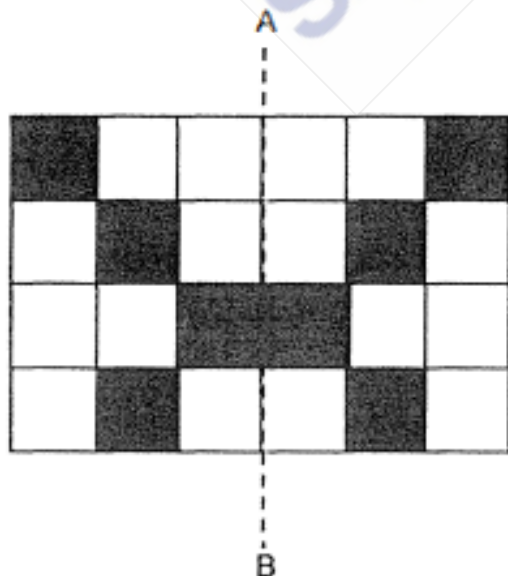
Booklet B (25 marks)

Questions 16 to 20 carry 1 mark each.
 Questions 21 to 30 carry 2 marks each.

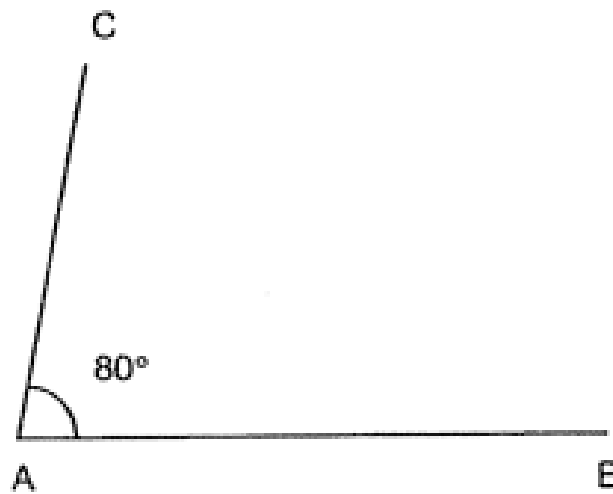
16)	49
17)	120
18)	$\frac{5}{6}, \frac{5}{9}, \frac{5}{12}$
19)	▲▲▲▲▲
20)	2h 40min

Note: Q21 to 30 carry 2 marks each

21.



22.



23. Now,

$$\begin{array}{lcl}
 \text{Michael : Daughter : Difference (unchanged)} \\
 = 2 & : & 1 : 1 \\
 = 10 & : & 5 : 5 \\
 = 50 & : & 25 : 25
 \end{array}$$

10 years ago,

$$\begin{array}{lcl}
 \text{Michael : Daughter : Difference (unchanged)} \\
 = 8 & : & 3 : 5 \\
 = 40 & : & 15 : 25
 \end{array}$$

Michael is 50 years old now.

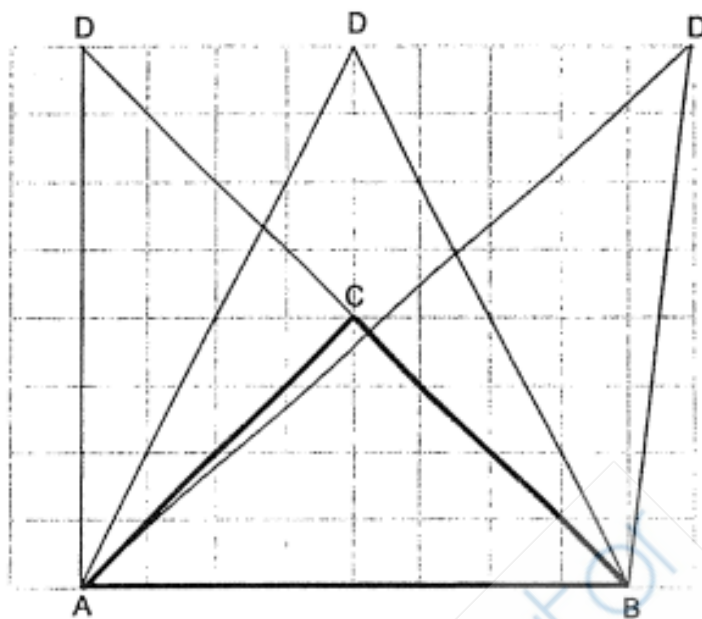
24. 6 packets $\rightarrow 21 - 17.4 = 3.6$ kg
 1 packet $\rightarrow 3.6 \div 6 = \underline{0.6 \text{ kg}}$

25. Wednesday = 3 Tuesday = 10
 $\% \text{ decrease} = \frac{10-3}{10} \times 100\% = \underline{70\%}$

Paper 2

1.	$(60+50+58+55) \div 4 = \underline{55.75}$
2.	$\frac{1}{2}$ of $4u = 2u$ New ratio = <u>2 : 5</u>
3.	350 pieces \rightarrow 21 min 1 piece $\rightarrow \frac{21}{350}$ min 150 pieces $\rightarrow \frac{21}{350} \times 150 = \underline{9 \text{ min}}$
4.	$6\text{m} \times 2\text{m} \times 3\text{m} = \underline{36 \text{ m}^3}$
5.	$33-28 = 5$ $48-33 = 15$ $15 \div 5 = \underline{3}$
6.	$\angle DCE = \angle BCA = (180^\circ - 92^\circ) \div 2 = 44^\circ$ $\angle CED + \angle CDE = 180^\circ - 44^\circ = \underline{136^\circ}$
7.	a) <u>40 litres</u> b) 0.8 litre \rightarrow 1 min 1 litre $\rightarrow (1 \div 0.8) \text{ min} = 1.25 \text{ min}$ 40 litres $\rightarrow 1.25 \text{ min} \times 40 = \underline{50 \text{ min}}$
8.	$\angle ABF = 90^\circ + 60^\circ = 150^\circ$ $\angle BAE = (180^\circ - 150^\circ) \div 2 = 15^\circ$ $\angle AEB = 180^\circ - 90^\circ - 15^\circ = \underline{75^\circ}$
9.	$\pi \times 30 = 30\pi$ $\pi \times 15 = 15\pi$ Perimeter $= 30\pi + 15\pi = 45\pi$ $\approx \underline{141.37 \text{ cm}}$
10.	(a) Percentage increase $= \frac{300-240}{240} \times 100\% = \underline{25\%}$ (b) 100% \rightarrow \$5 $144\% \rightarrow \frac{55}{100} \times 144 = \underline{\$7.20}$

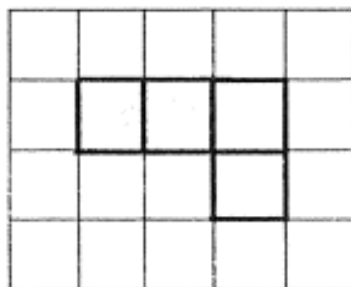
26. Any triangle with base AB and height 8 units. 3 examples as shown below:

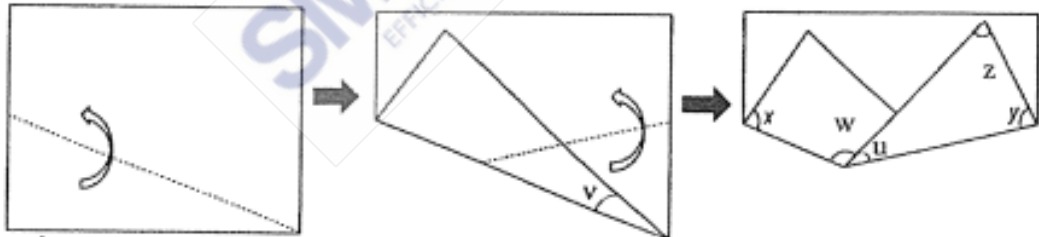


27. $5 \times 4 \times 2 = 40$ cubes
 Existing cubes = 31
 $40 - 31 = 9$ cubes $\rightarrow 243 \text{ cm}^3$
 Volume of 1 cube $\rightarrow 243 \div 9 = \underline{27 \text{ cm}^3}$
28. Area of $\triangle ABC = \frac{1}{2} \times 7 \text{ cm} \times 5 \text{ cm} = \underline{17.5 \text{ cm}^2} / 17\frac{1}{2} \text{ cm}^2$
- 29.

Statement	True	False	Not possible to tell
The average mark will decrease when Mathew joins the group.	✓		
Each of the 6 students scores more than Mathew.			✓

- 30.



11.	$42 \times 42 = 1764$ $\frac{22}{7} \times 21 \times 21 = 1386$ $\text{Area} = (1764 - 1386) \div 2 = \underline{189 \text{ cm}^2}$																				
12.	<p>(a) $60 \times 3 = 180$ $180 - 116 = 64$ $64 \div (3-1) = \underline{32 \text{ pears}}$</p> <p>(b) $60 - 32 = \underline{28 \text{ mangoes}}$</p> <p><u>Or</u> Guess & Check</p> <table><tr><th>Pear</th><th>Mango</th><th>Mango \rightarrow Pear</th><th>New Pear</th><th>Check</th></tr><tr><td>30</td><td>30</td><td>$30 \times 3 = 90$</td><td>$90 + 30 = 120$</td><td>x</td></tr><tr><td>31</td><td>29</td><td>$29 \times 3 = 87$</td><td>$87 + 31 = 118$</td><td>x</td></tr><tr><td>(a) 32</td><td>(b) 28</td><td>$28 \times 3 = 84$</td><td>$84 + 32 = 116$</td><td>✓</td></tr></table>	Pear	Mango	Mango \rightarrow Pear	New Pear	Check	30	30	$30 \times 3 = 90$	$90 + 30 = 120$	x	31	29	$29 \times 3 = 87$	$87 + 31 = 118$	x	(a) 32	(b) 28	$28 \times 3 = 84$	$84 + 32 = 116$	✓
Pear	Mango	Mango \rightarrow Pear	New Pear	Check																	
30	30	$30 \times 3 = 90$	$90 + 30 = 120$	x																	
31	29	$29 \times 3 = 87$	$87 + 31 = 118$	x																	
(a) 32	(b) 28	$28 \times 3 = 84$	$84 + 32 = 116$	✓																	
13.	<div></div> <p>(a) $\angle v = 90^\circ - 75^\circ = 15^\circ$ $\angle x = 90^\circ - 15^\circ = \underline{75^\circ}$</p> <p>(b) $\angle u = 180^\circ - 76^\circ - 75^\circ = 29^\circ$ $\angle w = 180^\circ - 29^\circ - 29^\circ = \underline{122^\circ}$</p>																				
14.	$35 \times 5 = 175$ $175 - 6 \times 9 = 121$ $121 + 11 = \underline{11}$																				
15.	$\frac{3}{4} \text{ Isaac} = \frac{4}{5} \text{ Caleb}$																				

	$\frac{12}{16} \text{ Isaac} = \frac{12}{15} \text{ Caleb}$ $31u = 1085$ $1u = 1085 \div 31 = 35$ $(a) 24u = 35 \times 24 = \underline{840}$ $(b) 3u = 35 \times 3 = \underline{105}$
16.	$(a) 5 \times 5 = \underline{25}$ $(b) 4n - 4 = 40$ $n = (40 + 4) \div 4 = \underline{11}$ $(c) (n - 2)^2 = (30 - 2)^2$ $= 28 \times 28$ $= \underline{784}$
17.	$(a) \text{ Plan A : } 80 - 10 = 70$ $70 \times \$2.50 + \$20 = \$195$ $\text{Plan B : } 80 - 20 = 60$ $60 \times \$3 + \$27 = \$207$ <hr/> $\text{Plan A is cheaper.}$ $(b) 7\% \times \$195 = \13.65 $\$195 + \$13.65 = \underline{\$208.65}$

NANYANG PRIMARY SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.
(20 marks)

1 Round 748 850 to the nearest hundred.

(1) 748 800

(2) 748 900

(3) 748 950

(4) 749 000

2 10 hundredths and 75 thousandths is _____

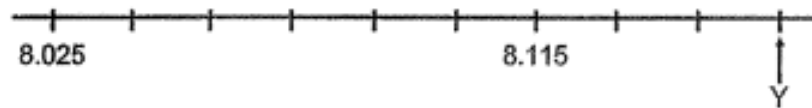
(1) 0.085

(2) 0.175

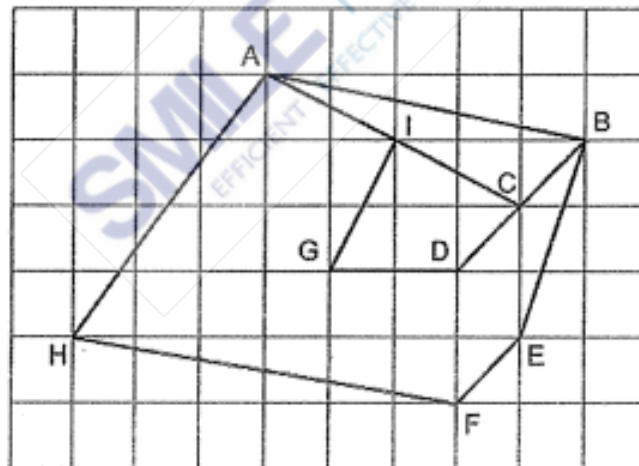
(3) 0.760

(4) 0.850

- 3 In the number line below, what is the value of Y as indicated by the arrow?

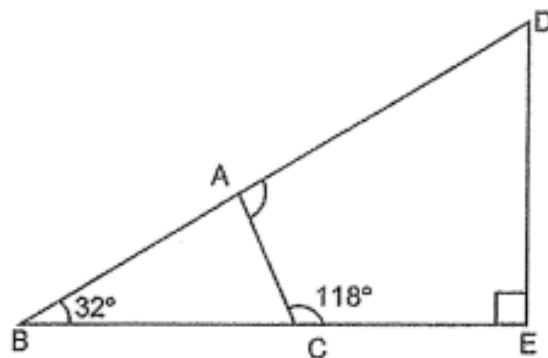


- (1) 8.130
 - (2) 8.145
 - (3) 8.160
 - (4) 8.175
- 4 Which pair of lines in the square grid are parallel?

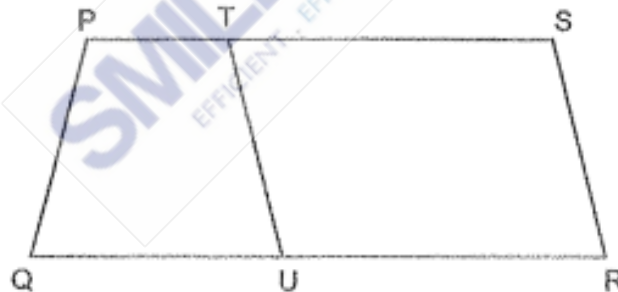


- (1) AH and BE
- (2) GI and AC
- (3) AB and HF
- (4) BD and EF

- 5 BCE and DAB are straight lines. Find $\angle DAC$.



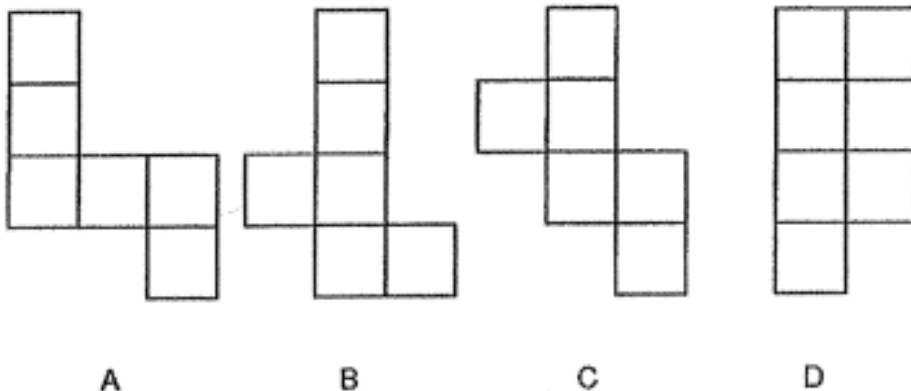
- (1) 148°
 - (2) 94°
 - (3) 86°
 - (4) 62°
- 6 PQRS is a trapezium and RSTU is a parallelogram.



Which of the following pair of angles gives a sum of 180° ?

- (1) $\angle QPT$ and $\angle PTU$
- (2) $\angle TSR$ and $\angle UTS$
- (3) $\angle TUR$ and $\angle TSR$
- (4) $\angle PQU$ and $\angle URS$

7 Which two of the following are nets of a cube?

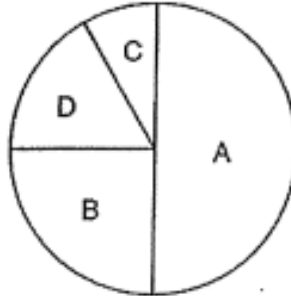


- (1) A and B
 (2) A and C
 (3) B and C
 (4) C and D

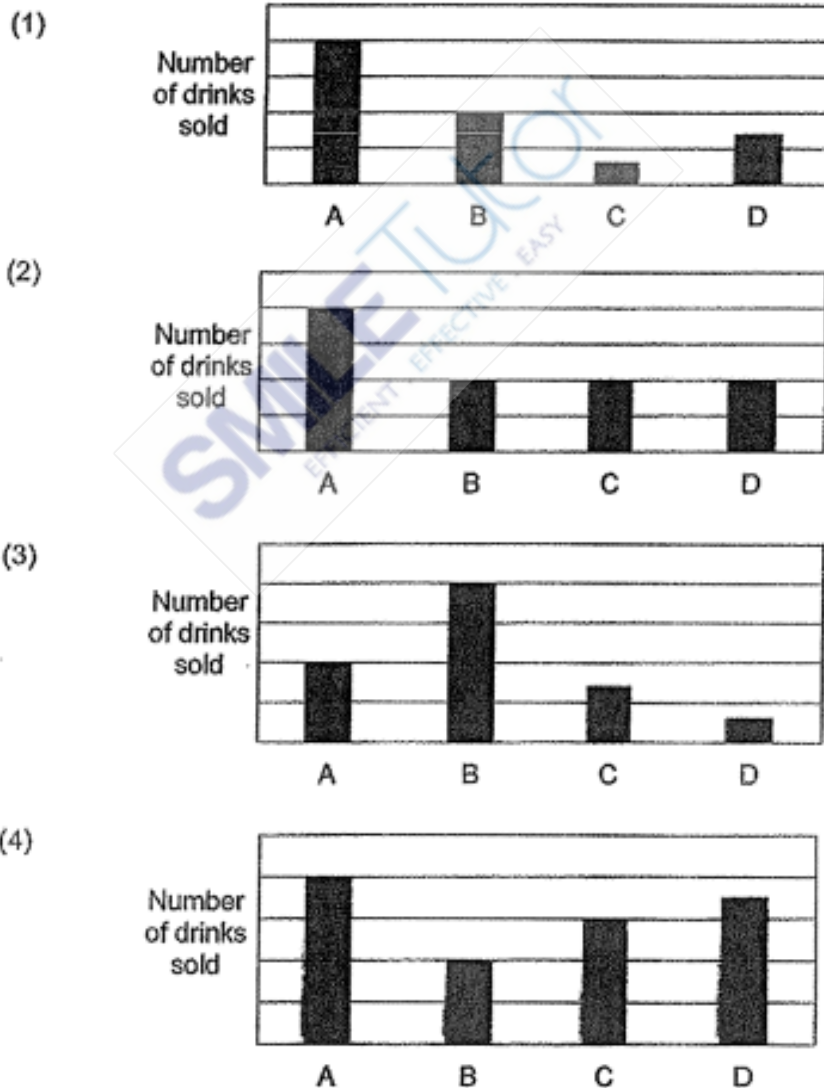
8 Huiling had \$z. Ravi had twice as much money as Huiling. Jas had \$5 more than Ravi. If Jas had \$10, how much money did Huiling have?

- (1) \$30
 (2) \$7.50
 (3) \$3
 (4) \$2.50

- 9 The pie chart shows the number of four types of drinks sold in the school canteen.



Which bar graph best represents the information in the pie chart?



- 10 Which of the following is likely to be the length of a bench in the school canteen?

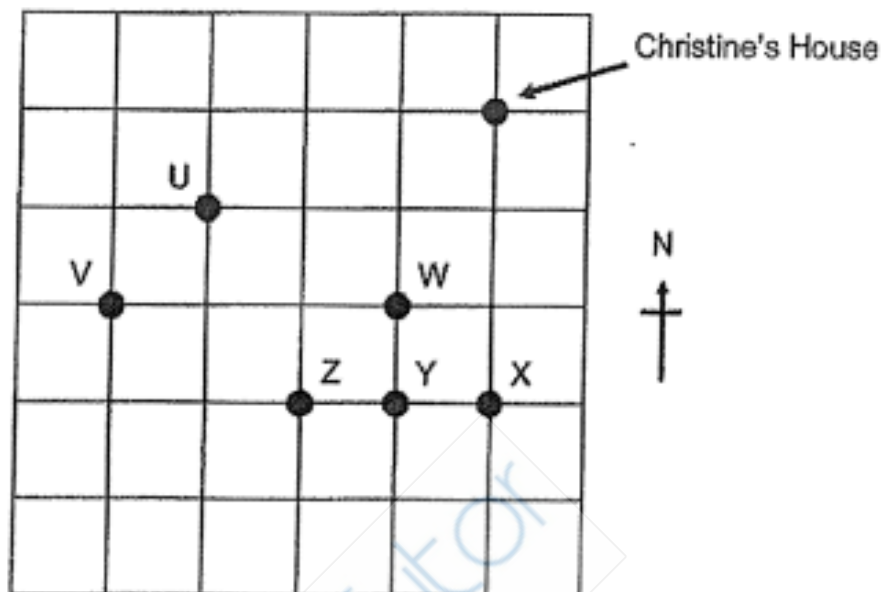


- (1) 1.8 cm
- (2) 18 cm
- (3) 1.8 m
- (4) 18 m

- 11 Which of the following fractions is closest to $\frac{4}{5}$?

- (1) $\frac{3}{5}$
- (2) $\frac{5}{6}$
- (3) $\frac{7}{9}$
- (4) $\frac{9}{10}$

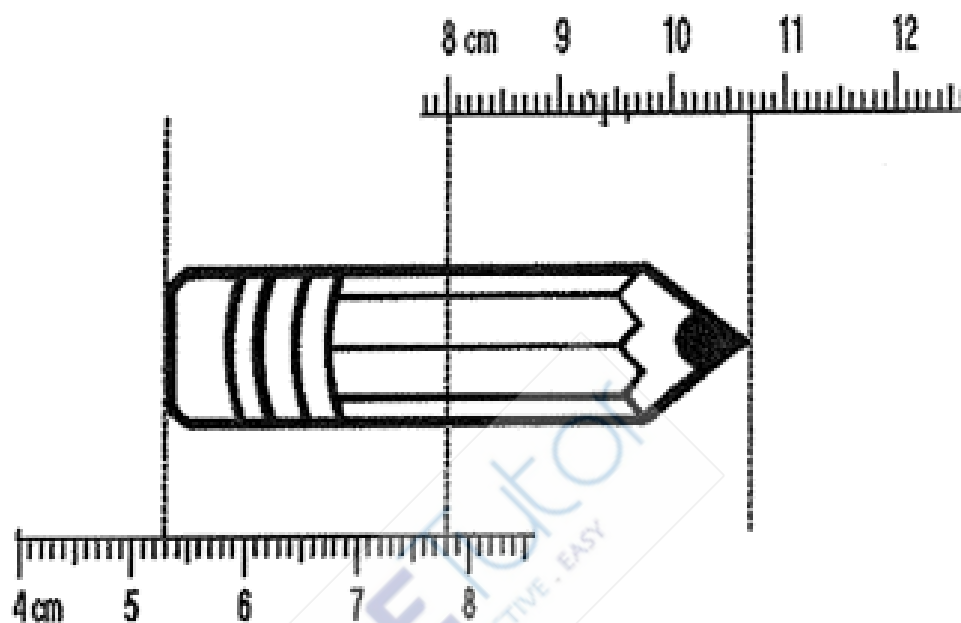
- 12 The square grid shows the positions of the buildings U, V, W, X, Y and Z.



Christine stands at a location south-west of her house and east of a building. When facing south-east from Christine's location, she sees a building. What is that building?

- (1) Building W
- (2) Building X
- (3) Building Y
- (4) Building Z

13 What is the length of the pencil shown below?



- (1) 5.2 cm
- (2) 5.4 cm
- (3) 5.6 cm
- (4) 10.7 cm

- 14 Viv, Wendy and Xinyi each had some beads. They each used the same number of beads to make a necklace. Viv used $\frac{1}{3}$ of her beads, Wendy used $\frac{7}{8}$ of her beads and Xinyi used $\frac{3}{4}$ of her beads. What was the ratio of the number of beads Viv had at first to the number of beads Wendy had at first to the number of beads Xinyi had at first?

(1) 1 : 7 : 3

(2) 3 : 8 : 4

(3) 8 : 21 : 18

(4) 63 : 24 : 28

- 15 The first 7 numbers of a number pattern are given below.

$$\underset{1^{\text{st}}}{4}, 16, 8, 32, 16, 64, \underset{7^{\text{th}}}{32}, \dots$$

What is the 13th number?

(1) 128

(2) 256

(3) 512

(4) 1024

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

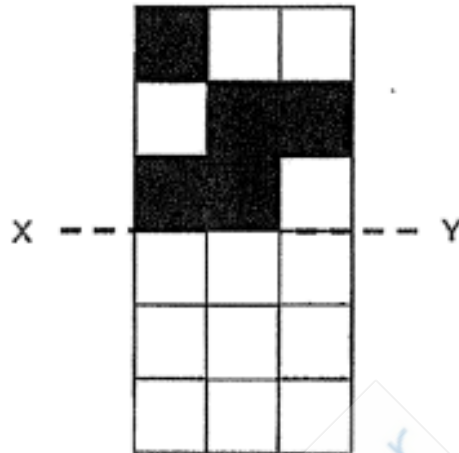
- 16 Mr Ahmad had 2 bags of marbles. One of the bag contained 6 red marbles and 3 blue marbles. The other bag contained 2 red marbles and 4 yellow marbles. What fraction of the total marbles from both bags were red marbles?

Ans: _____

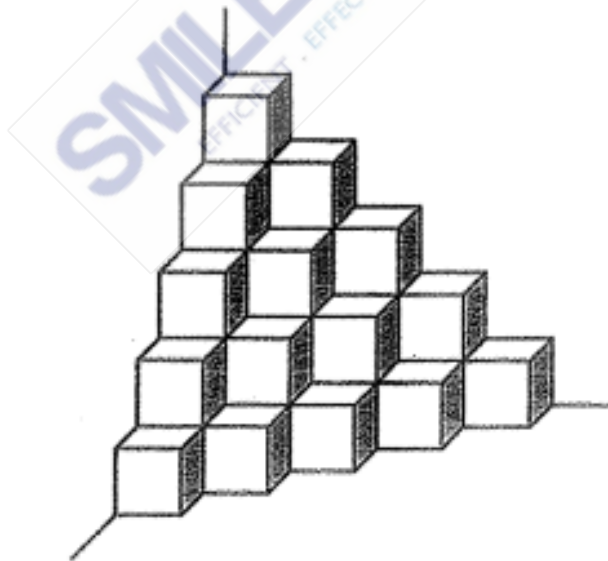
- 17 Find the value of $3.707 \text{ l} + 1.373 \text{ l}$
Express the answer in litres and millilitres.

Ans: _____ l _____ ml

- 18** There are 5 shaded squares in the figure. Shade 5 more squares to form a symmetric figure with XY as the line of symmetry.

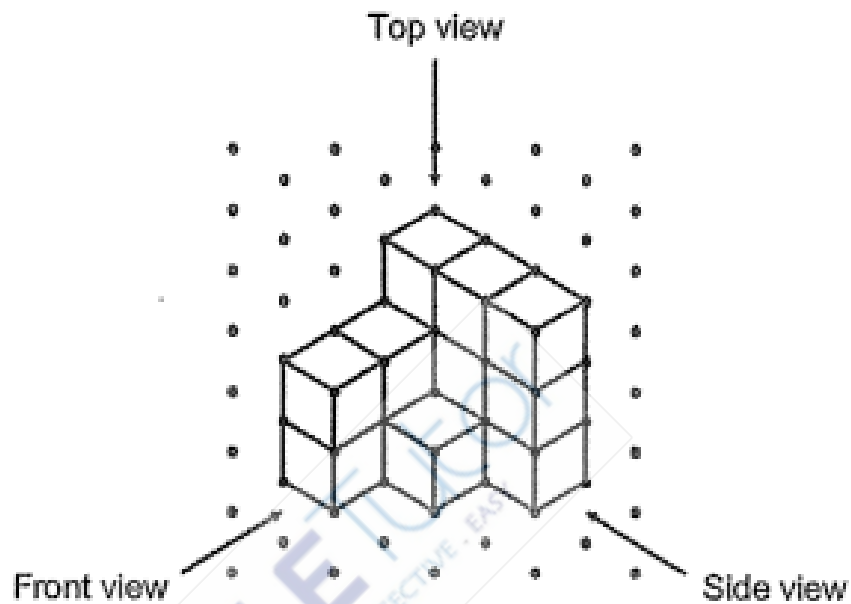


- 19** The solid below is made up of 1-cm cubes. What is the volume of the solid?



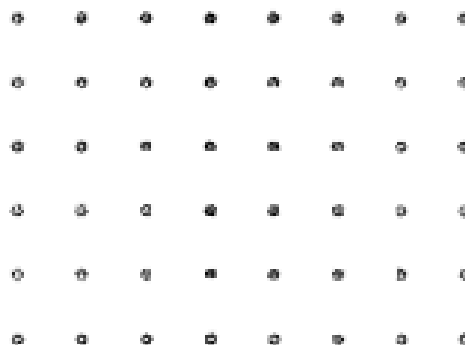
Ans: _____ cm^3

- 20 Paminder stacked 14 unit cubes and glued them together to form the solid below.



Draw the side view of the solid on the grid below.

Side View



Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 A faulty traffic light had its red light blinking every 2 seconds, its amber light blinking every 3 seconds and its green light blinking every 8 seconds. If all three lights blink now, how many seconds later will they all blink together again?



Ans: _____ s

22 Mr Liew paid \$78.50 for a pair of shoes and \$10.00 for a towel.

- (a) How much did he spend altogether? Round the answer to the nearest dollar.

Ans: (a) \$ _____

- (b) Find the cost of 30 such towels.

Ans: (b) \$ _____

23 A day camp lasted 8 h 20 min. The day camp started 1 h 45 min before the snack break. Snack break was at 11.30 a.m. What time did the day camp end? Give your answer in 24-hour clock.

Ans: _____

- 24 In 2021, Maggie saved 20% of her monthly salary of \$3000 each month. In 2022, Maggie received an increase in her monthly salary and she saved \$180 more per month. What was the percentage increase in Maggie's monthly savings?

Ans: _____ %

- 25 There were 1338 big buns and 7982 small buns in a factory. The buns were packed into bags. Each bag contained 1 big bun and 6 small buns. What was the greatest number of bags that could be packed?

Ans: _____

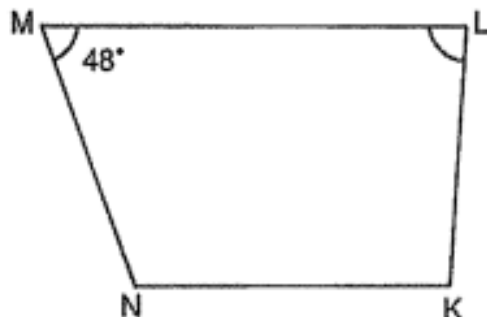
- 26 Mrs Chen sold $\frac{1}{3}$ of her apples on Monday. She sold $\frac{2}{3}$ of the remaining apples on Tuesday. Mrs Chen had 14 apples left after selling apples on Monday and Tuesday. How many apples did Mrs Chen have at first?

Ans: _____

- 27 Mary had a roll of ribbon with a total length of 1 m. She cut off $\frac{1}{5}$ m of the ribbon. The remaining length of the ribbon was cut into shorter pieces of length $\frac{1}{8}$ m each. At most, how many pieces of $\frac{1}{8}$ -m long ribbon did Mary have in the end?

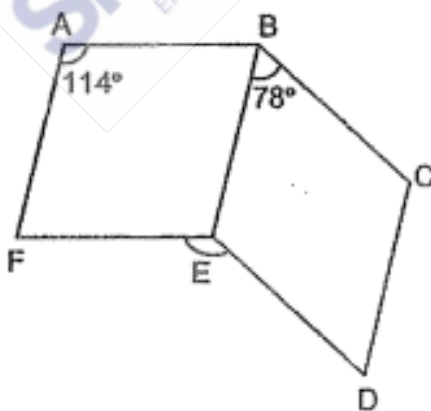
Ans: _____

- 28 In the figure below, KLMN is a trapezium and LM is parallel to KN.
 $\angle LMN = 48^\circ$ and $\angle MNK$ is $\frac{3}{2}$ times of $\angle MLK$. Find $\angle MLK$.



Ans: _____°

- 29 ABEF and BCDE are parallelograms. $\angle FAB = 114^\circ$ and $\angle EBC = 78^\circ$. Find $\angle DEF$.



Ans: _____°

- 30 Pam Bakery uses m kg of sugar each month. Pam Bakery uses 30 kg more sugar than Sweet Bakery each month. If $m = 100$, how many kilograms of sugar do Pam Bakery and Sweet Bakery use in total for one year?



Ans: _____ kg


End of Paper

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 The original price of a book was \$ k . David bought 15 such books. After he was given a discount of \$10, he paid a total of \$110. What was the original price of one such book?

Ans: \$ _____

- 2 The table below shows the charges for renting a bicycle.

	Days	Time	Charge
	Mon to Fri	7 a.m. to 5 p.m.	\$4 per hour
		5 p.m. to 9 p.m.	\$8 per hour
	Sat and Sun	7 a.m. to 9 p.m.	\$12 per hour

On Friday, Mr Wu rented a bicycle and returned it at 6 p.m. He paid a total of \$24. For how many hours did he rent the bicycle?

Ans: _____ h

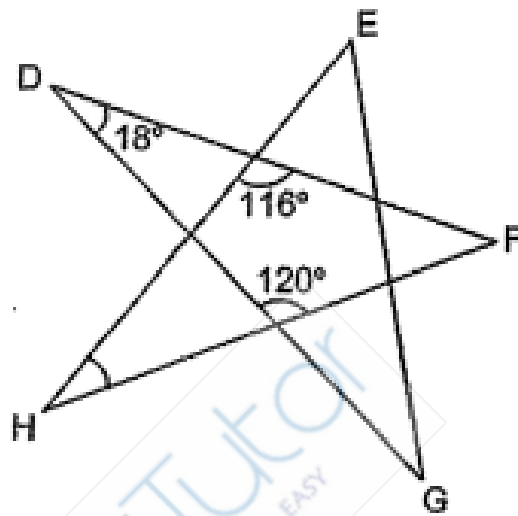
- 3 Ji Min saved some money in April. She saved \$2.50 per day for 20 days. She then saved \$3.10 per day for the rest of the month. What was the average amount of money she saved per day in April? (There are 30 days in April.)

Ans: \$ _____

- 4 Dana bought an oven from Shop A at 15% discount during a sale. The price of the oven was \$800 before discount at Shop A. Hailey bought an identical oven from Shop B at 20% discount and paid the same amount as Dana. What was the price of the oven before discount at Shop B?

Ans: \$ _____

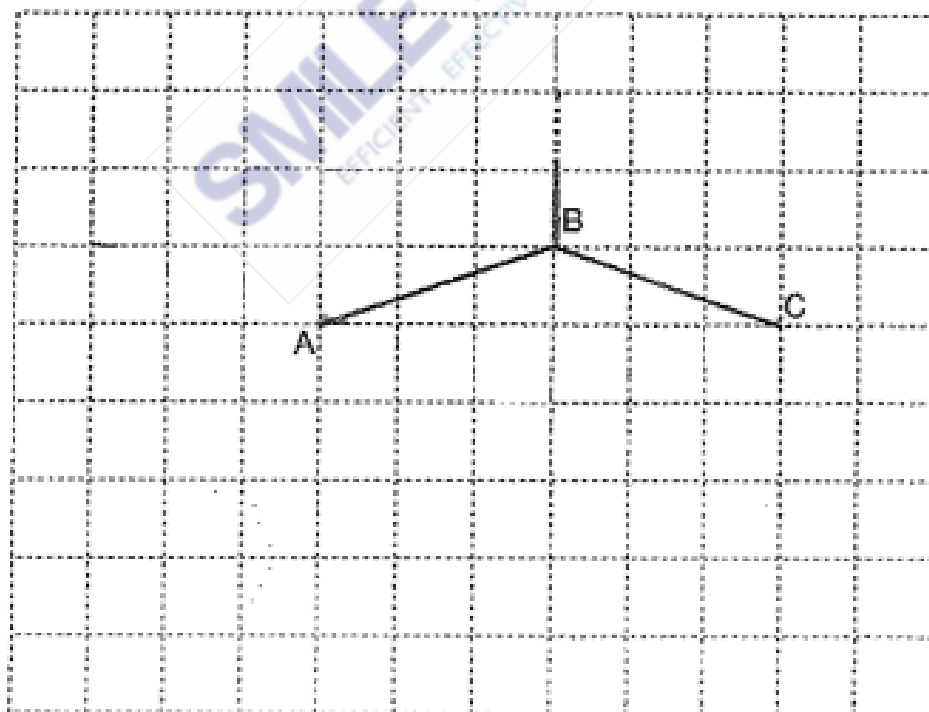
- 5 The figure is formed by 5 straight lines DF, EH, EG, FH and DG. Find $\angle EHF$.



Ans: _____°

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

- 6 In the square grid below, AB and BC are straight lines.
- (a) AB and BC form two sides of a rhombus ABCD. Complete the drawing of the rhombus ABCD. [1]
- (b) AB also forms one side of a trapezium ABEF. AB is parallel to EF. The length of EF is twice the length of AB. DAF forms a straight line and $AD = AF$. Complete the drawing of trapezium ABEF such that it does not overlap with the rhombus. [2]



- 7 Peter had \$18.20 less than Jane at first. After Jane gave some of her money to Peter, he had \$29.20 more than her. How much money did Jane give to Peter?



Ans: _____ [3]

- 8 Kira had a roll of blue paper and a roll of red paper. The length of the roll of blue paper is $\frac{1}{2}$ the length of the roll of red paper. She cut the roll of blue paper into equal parts of length 9 cm and on each part she drew 3 star shapes. After that, she cut the roll of red paper into equal parts of length 7 cm and on each part she drew 5 heart shapes. What fraction of the shapes Kira drew were star shapes?



Ans: _____ [3]

- 9 Four towns A, B, C and D collected plastic bottles to be recycled. Town A and B collected an average of 324 plastic bottles. Town B, C and D collected an average of 344 plastic bottles. The total number of plastic bottles collected by all 4 towns was 6 times the number that town B collected. How many plastic bottles did town B collect?



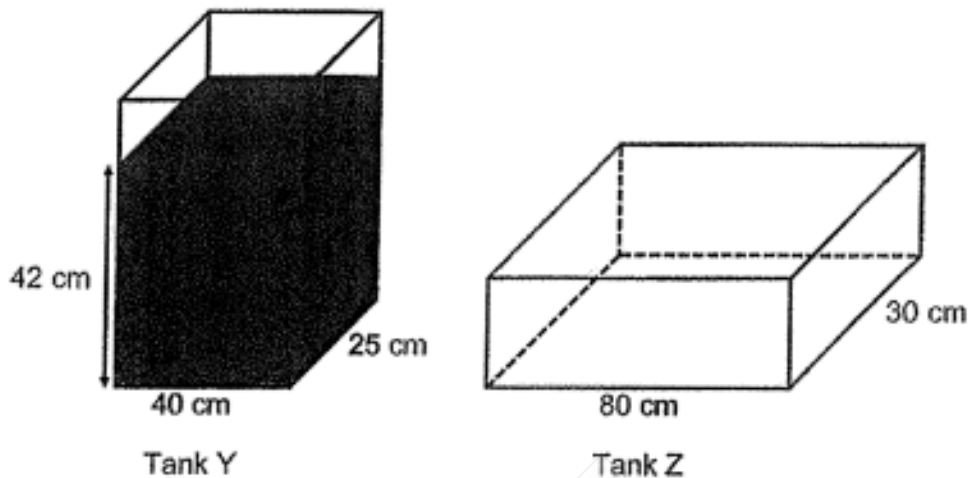
Ans: _____ [3]

- 10 Mr Toh left Town B and drove to Town C at 11 a.m. at a constant speed of 60 km/h. Mr Lee left Town A at 12 noon and drove to Town C at a constant speed of 80 km/h. Town A and Town B were 15 km apart. After travelling from Town A to Town B, Mr Lee then travelled to Town C along the same route as Mr Toh. At what time did Mr Lee catch up with Mr Toh?



Ans: _____ [3]

- 11 Tank Y and Tank Z are two rectangular tanks. At first, Tank Y contained some water to a height of 42 cm and Tank Z was empty.



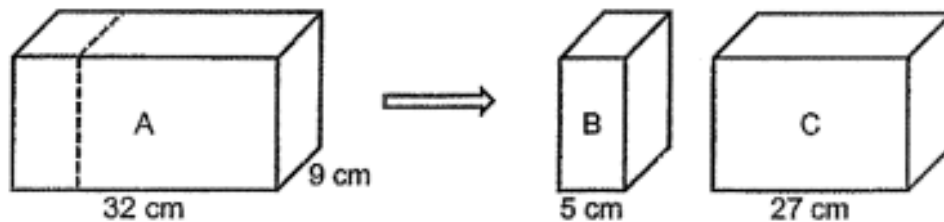
- (a) What was the volume of the water in Tank Y at first?

Ans: (a) _____ [1]

- (b) Kanthea poured some water from Tank Y into Tank Z. After that, Tank Y had $\frac{2}{5}$ as much water as Tank Z. Find the height of the water level in Tank Z.

Ans: (b) _____ [3]

- 12 A rectangular block A was cut along the dotted line into two smaller rectangular blocks of equal height, B and C, as shown below. The volume of block B was 4752 cm^3 less than that of block C.



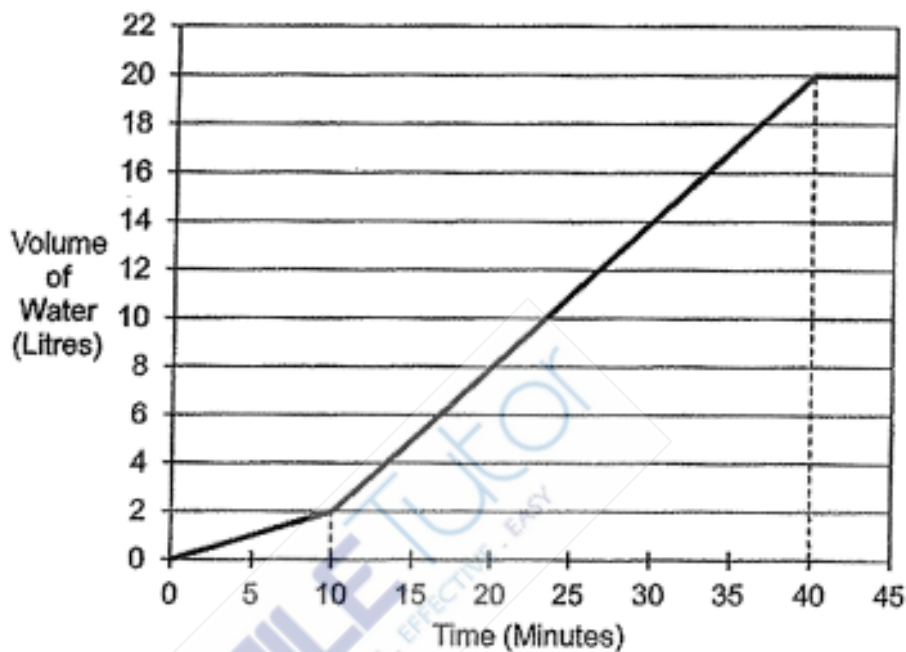
- (a) What was the height of each block?

Ans: (a) _____ [2]

- (b) Matthias packed 12 of block C such that they fit exactly into a box with a square base. The box had the same height as block C. At most, how many of block B can be packed into such a box?

Ans: (b) _____ [2]

- 13 JI Eun filled a tank with water using two taps, Tap A and Tap B. She turned on Tap A first. After 10 minutes, she turned on Tap B. Both taps were turned off at the same time when the tank was completely filled. The graph below shows the amount of water in the tank over 45 minutes.



- (a) What was the capacity of the tank?

Ans: (a) _____ [1]

- (b) How many litres of water flowed from Tap B per minute?

Ans: (b) _____ [3]

- 14** Marlam had some gold, some silver and some copper tokens for a carnival. The ratio of the number of gold tokens to the total number of silver and copper tokens was $10 : 9$. The ratio of the number of silver tokens to the number of copper tokens was $3 : 1$. She exchanged 12 gold tokens for a stuffed toy and some silver tokens for a jar of marbles. In the end, the ratio of the number of gold tokens to the number of copper tokens became $4 : 1$ and the ratio of the number of silver tokens to the number of copper tokens became $4 : 3$.

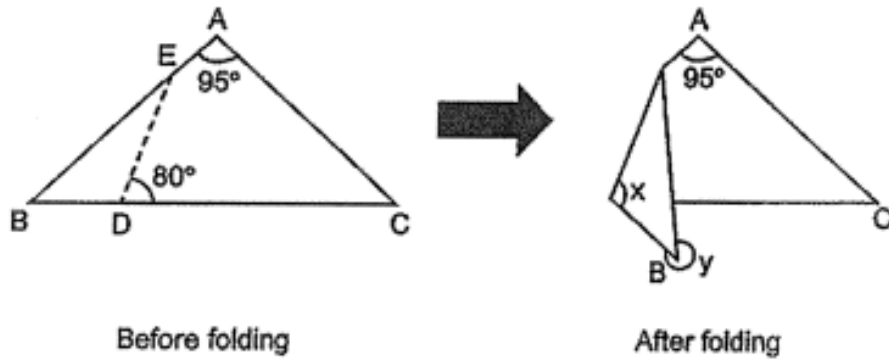
- (a) What was the ratio of the number of gold tokens to the number of silver tokens to the number of copper tokens Marlam had at first?

Ans: (a) _____ [1]

- (b) How many silver tokens did Marlam exchanged for the jar of marbles?

Ans: (b) _____ [3]

- 15 ABC is a triangular piece of paper with $AB = AC$. $\angle BAC = 95^\circ$. AEB and BDC are straight lines. The paper is then folded along the line DE as shown below.



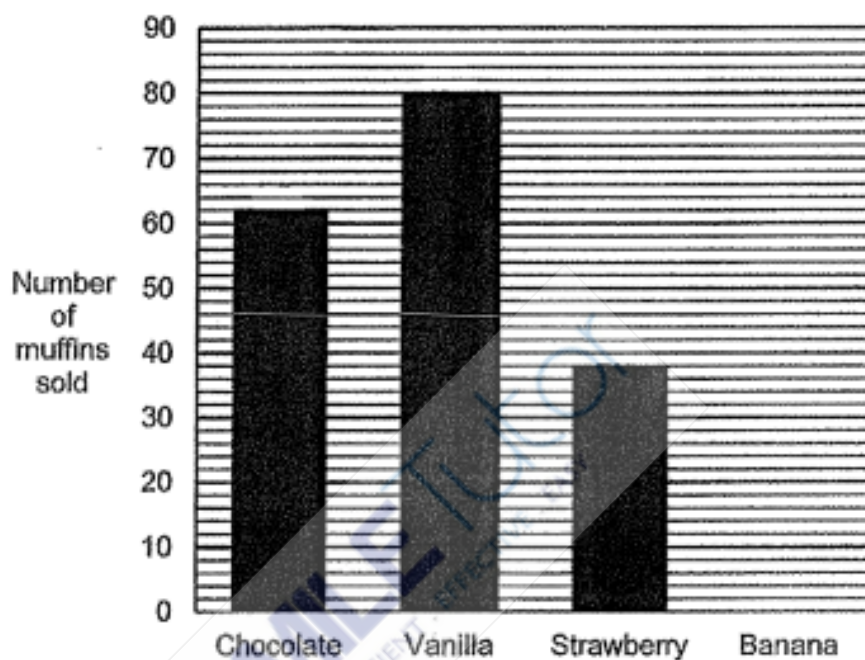
(a) Find $\angle x$.

Ans: (a) _____ [2]

(b) Find $\angle y$.

Ans: (b) _____ [2]

- 16 A shop sells four types of muffin. The bar graph shows the number of each type of muffin sold by the shop. The bar for the number of banana muffins sold has not been drawn. The number of banana muffins sold was $\frac{3}{5}$ the number of vanilla muffins sold.



- (a) How many banana muffins were sold?

Ans: (a) _____ [1]

- (b) The table below shows the prices of the muffins.

Type of muffin	Price per muffin
Chocolate	\$0.85
Vanilla	\$0.70
Strawberry	\$1.35
Banana	\$1.20

From the sales of which type of muffin did the shop collect the most money? What was the amount of money?

Ans: (b) Muffin: _____

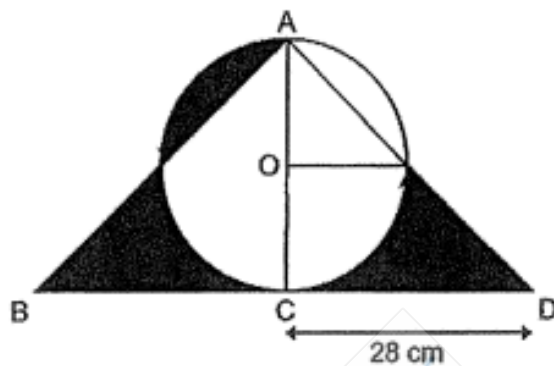
Amount: _____ [2]

- (c) Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
The number of chocolate muffins sold was 62.			
The ratio of the number of strawberry muffins sold to the number of strawberry muffins left unsold was 3 : 2.			
The shop sold 46 boxes of 5 muffins.			

[2]


- 17 The figure below is made up of a semicircle, 2 identical quarter circles and 2 identical right-angled isosceles triangles, ACB and ACD . $CA = CB = CD$. O is the centre of the circle. AOC and BCD are straight lines. Find the total area of the shaded parts.
 (Take $\pi = 3.14$)



Ans: _____ [5]

End of Paper

ANSWER SHEET


HANYANG PRIMARY SCHOOL
PRELIMINARY EXAMINATION
2022
PRIMARY 6
MATHEMATICS
PAPER 1
(BOOKLET A)
 Total Duration for Booklets A and B: 1 hour
 Additional materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO PUPILS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Answer Sheet (OAS) provided.
5. The use of calculators is **NOT** allowed.

Name: _____ ()

Class: Primary 6 ()

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Mark your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (20 marks)

1. Round 748 000 to the nearest hundred.

- (1) 748 000 $748\ 000 \approx 748\ 000$ (Ans)
 (2) 748 000
 (3) 748 000
 (4) 749 000 (2)

2. 10 hundredths and 75 thousandths is _____

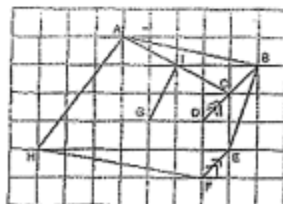
- (1) 0.085 $\frac{10}{100} + \frac{75}{1000}$
 (2) 0.175 $= 0.10 + 0.075$
 (3) 0.700 $= 0.175$ (Ans) (2)
 (4) 0.250

3. In the number line below, what is the value of Y as indicated by the arrow?



- (1) 0.120
 (2) 0.145
 (3) 0.100 $0.115 - 0.025 = 0.09$
 (4) 0.175 $\frac{0.09}{5} = 0.018$
 $0.115 + (0.018 \times 3) = 0.115 + 0.054 = 0.169$ (Ans)

4. Which pair of lines in the square grid are parallel?



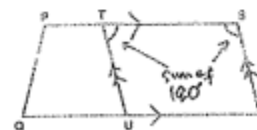
- (1) AH and BE
 (2) GI and AC (4)
 (3) AB and HF
 (4) BD and EF

5. BOE and DAS are straight lines. Find $\angle BMC$.



- (1) 140° $180^\circ - 115^\circ = 65^\circ$
 (2) 94° $180^\circ - (120^\circ + 65^\circ) = 95^\circ$ (3)
 (3) 85° $180^\circ - 95^\circ = 85^\circ$
 (4) 82° $= 85^\circ$

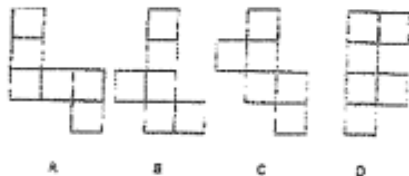
6. PQRS is a trapezium and TSTU is a parallelogram.



Which of the following pair of angles gives a sum of 100° ?

- (1) $\angle QPT$ and $\angle PTU$
 (2) $\angle TSR$ and $\angle UTS$ (2)
 (3) $\angle TUR$ and $\angle TSR$
 (4) $\angle POU$ and $\angle URS$

- 7 Which two of the following are nets of a cube?



- (1) A and B
(2) A and C
(3) B and C
(4) C and D

(3)

- 8 Hailing had \$x. Ravi had twice as much money as Hailing. Jas had \$5 more than Ravi. If Jas had \$10, how much money did Hailing have?

- (1) \$10
(2) \$7.50
(3) \$3
(4) \$2.50

$$\begin{aligned} H &\rightarrow \$x \\ R &\rightarrow 2 \times \$x = \$2x \\ J &\rightarrow \$2x + \$5 \\ 2x + 5 &= 10 \\ 2x &= 10 - 5 \\ &= 5 \\ x &= 5 \div 2 \\ &= 2.5 \end{aligned}$$

(4)

4

- 10 Which of the following is likely to be the length of a bench in the school canteen?



- (1) 1.8 cm
(2) 18 cm
(3) 1.8 m
(4) 18 m

(3)

- 11 Which of the following fractions is closest to $\frac{4}{5}$?

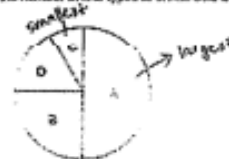
- (1) $\frac{3}{5}$
(2) $\frac{5}{6}$
(3) $\frac{7}{8}$
(4) $\frac{9}{10}$

$$\begin{aligned} \frac{4}{5} - \frac{3}{5} &= \frac{1}{5} \\ \frac{5}{6} - \frac{4}{5} &= \frac{25}{30} - \frac{24}{30} = \frac{1}{30} \\ \frac{7}{8} - \frac{4}{5} &= \frac{35}{40} - \frac{32}{40} = \frac{3}{40} \\ \frac{9}{10} - \frac{4}{5} &= \frac{9}{10} - \frac{8}{10} = \frac{1}{10} \end{aligned}$$

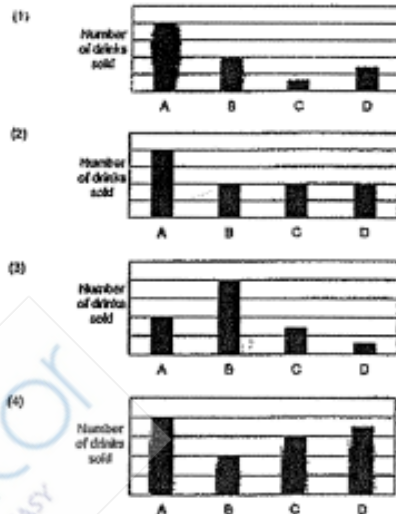
→ smallest, so closest.

(3)

- 9 The pie chart shows the number of four types of drinks sold in the school canteen.



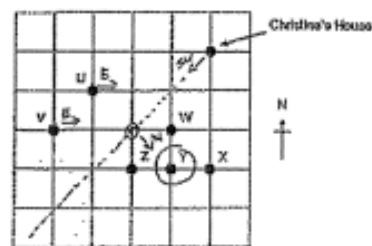
Which bar graph best represents the information in the pie chart?



(1)

5

- 12 The square grid shows the positions of the buildings U, V, W, X, Y and Z.

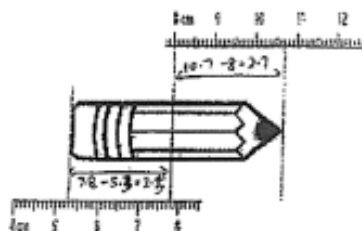


Christina stands at a location south-east of her house and east of a building. When facing south-east from Christina's location, she sees a building. What is that building?

- (1) Building W
(2) Building X
(3) Building Y
(4) Building Z

(3)

- 13 What is the length of the pencil shown below?



- (1) 6.2 cm
(2) 5.4 cm
(3) 6.0 cm
(4) 10.7 cm

$$7.2 - 2.5 = 4.7$$

(1)

- 14 Vir, Wendy and Xinyi each had some beads. They each used the same number of beads to make a necklace. Vir used $\frac{1}{3}$ of her beads. Wendy used $\frac{7}{8}$ of her beads and Xinyi used $\frac{2}{3}$ of her beads. What was the ratio of the number of beads Vir had at first to the number of beads Wendy had at first to the number of beads Xinyi had at first?

(1) $1 : 7 : 3$

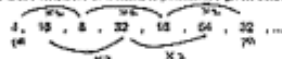
(2) $3 : 8 : 4$

(3) $8 : 21 : 18$

(4) $43 : 24 : 20$

$$\begin{aligned} V &= 3a \\ W &= 8a \\ X &= 6a \end{aligned}$$

- 15 The first 7 numbers of a number pattern are given below.



What is the 13th number?

(1) 128

(2) 256

(3) 512

(4) 1024


$3^{th} \rightarrow$ odd number.

use pattern

4, 18, 8, 32, 18, 64, 32, ...

$$\begin{aligned} 13^{th} &\rightarrow 4 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \\ &= 4 \times 64 \\ &= 256 \end{aligned}$$

(2)


NANYANG PRIMARY SCHOOL
PRELIMINARY EXAMINATION
2022
PRIMARY 6
MATHEMATICS
PAPER 1
(BOOKLET B)
 Total Duration for Booklets A and B: 1 hour

INSTRUCTIONS TO PUPILS

- Do not turn over this page until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Write your answers in this booklet.
- The use of calculator is **NOT** allowed.

Name: _____ ()

Class: Primary 6 ()

Booklet B / 25

Please sign and return the examination paper the next day. Any question should be raised at the same time when returning paper.

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

- 16 Mr Ahmed had 2 bags of marbles. One of the bag contained 6 red marbles and 3 blue marbles. The other bag contained 2 red marbles and 4 yellow marbles. What fraction of the total marbles from both bags were red marbles?

$$\frac{\text{Red}}{\text{Total}} = \frac{6+2}{6+3+2+4} = \frac{8}{15}$$

(ans)

Ans: $\frac{8}{15}$

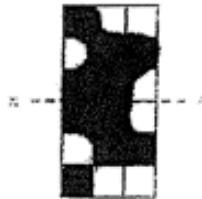
- 17 Find the value of $3.707 \div 1.373$. Express the answer in **hires** and **millions**.

$$3.707 \div 1.373 = 5.080$$

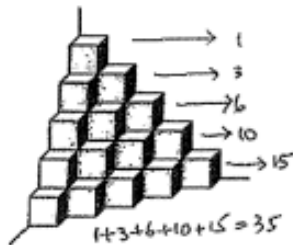
$$5.080 \text{ h} = 5 \text{ h } 80 \text{ m}$$

Ans: 5 h 80 m

- 18 There are 6 shaded squares in the figure. Shade 6 more squares to form a symmetric figure with XY as the line of symmetry.

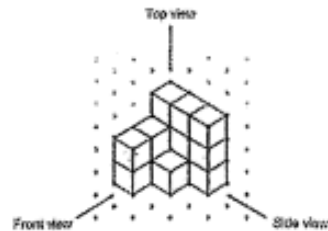


- 19 The solid below is made up of 1-cm cubes. What is the volume of the solid?



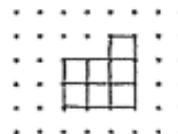
Ans: 35 cm³

- 20 Parvinder stacked 14 unit cubes and glued them together to form the solid below.



Draw the side view of the solid on the grid below.

Side View



Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 A faulty traffic light had its red light blinking every 2 seconds, its amber light blinking every 3 seconds and its green light blinking every 5 seconds. If all three lights blink now, how many seconds later will they all blink together again?

$$\begin{aligned} 2 &\rightarrow 2, 4, 6, 8, 10, \dots, 20, 22, (24) \\ 3 &\rightarrow 3, 6, 9, 12, \dots, 18, 21, (24) \\ 5 &\rightarrow 5, 10, (15), (20), (25) \end{aligned}$$

Ans: 24 s

- 22 Mr Uyar paid \$78.50 for a pair of shoes and \$19.90 for a towel.

(a) How much did he spend altogether? Round the answer to the nearest dollar.

$$\begin{aligned} \$78.50 + \$19.90 &= \$98.40 \\ &\approx \$98 \text{ (ans)} \end{aligned}$$

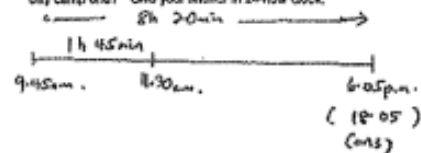
Ans: (a) \$ 98

(b) Find the cost of 30 such towels.

$$\begin{aligned} \$19.90 \times 30 &= \$19.90 \times 3 \times 10 \\ &= \$597.00 \times 10 \\ &= \$5970 \text{ (ans)} \end{aligned}$$

Ans: (b) \$ 5970

- 23 A day camp lasted 8 h 20 min. The day camp started 1 h 45 min before the snack break. Snack break was at 11:30 a.m. What time did the day camp end? Give your answer in 24-hour clock.



Ans: 18 05

- 24 In 2021, Maggie saved 20% of her monthly salary of \$2000 each month. In 2022, Maggie received an increase in her monthly salary and she saved \$100 more per month. What was the percentage increase in Maggie's monthly savings?

$$\frac{20}{100} \times 2000 = 400$$

$$\frac{120}{600} = 100\% \times 30\%$$

Ans: 30%

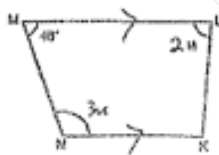
- 25 There were 1350 big buns and 7502 small buns in a factory. The buns were packed into bags. Each bag contained 1 big bun and 6 small buns. What was the greatest number of bags that could be packed?

$$7502 \div 6 = 1330 \text{ R } 2$$

$$\begin{array}{r} 1330 \text{ less than } 1338 \\ \downarrow \\ (ms) \end{array}$$

Ans: 1330

- 26 In the figure below, KLMN is a trapezium and LM is parallel to KN. $\angle LMN = 48^\circ$ and $\angle MKN$ is $\frac{2}{3}$ times of $\angle MKN$. Find $\angle MLK$.

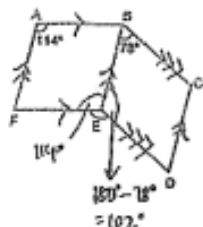


$$\begin{aligned} 2x + 48 &= 180 \\ 2x &= 180 - 48 \\ &= 132 \\ x &= 132 \div 2 \\ &= 66 \end{aligned}$$

$$2x = 66 \times 2 = 132 \text{ (Ans)}$$

Ans: 132

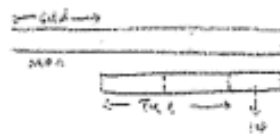
- 27 ADEF and BCDE are parallelograms. $\angle FAB = 114^\circ$ and $\angle EBC = 70^\circ$. Find $\angle DEF$.



$$360 - 102 - 114 = 144 \text{ (Ans)}$$

Ans: 144

- 28 Mrs Chen sold $\frac{1}{3}$ of her apples on Monday. She sold $\frac{2}{3}$ of the remaining apples on Tuesday. Mrs Chen had 24 apples left after selling apples on Monday and Tuesday. How many apples did Mrs Chen have at first?



$$\begin{aligned} 14 \times 3 &= 42 \\ 42 \div 2 &= 21 \\ 21 \times 3 &= 63 \text{ (Ans)} \end{aligned}$$

Ans: 63

- 29 Mary had a roll of ribbon with a total length of 1 m. She cut off $\frac{1}{5}$ m of the ribbon. The remaining length of the ribbon was cut into shorter pieces of length $\frac{1}{8}$ m each. At most, how many pieces of $\frac{1}{8}$ m long ribbon did Mary have in the end?

$$\begin{aligned} 1 \text{ m} - \frac{1}{5} \text{ m} &= \frac{4}{5} \text{ m} \\ \frac{4}{5} \div \frac{1}{8} &= \frac{4}{5} \times \frac{8}{1} \\ &= \frac{32}{5} \\ &= 6 \frac{2}{5} \\ &= 6 \text{ (Ans)} \end{aligned}$$


Ans: 6

- 30 Pam Bakery uses m kg of sugar each month. Pam Bakery uses 30 kg more sugar than Sweet Bakery each month. If m = 100, how many kilograms of sugar do Pam Bakery and Sweet Bakery use in total for one year?

$$\begin{aligned} \text{Pam} &\rightarrow m \text{ kg} \\ \text{Sweet} &\rightarrow (m - 30) \text{ kg} \\ m + m - 30 &= 2m - 30 \\ &= 2 \times 100 - 30 \\ &= 200 - 30 \\ &= 170 \\ 170 \times 12 &= 2040 \text{ (Ans)} \end{aligned}$$

Ans: 2040 kg

End of Paper


MANYANG PRIMARY SCHOOL
PRELIMINARY EXAMINATION
2022
PRIMARY 6
MATHEMATICS
PAPER 2
 Duration: 1 hour 30 minutes

INSTRUCTIONS TO PUPILS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.
5. The use of an approved calculator is allowed.

Name: _____ ()

Class: Primary 6 ()

Parent's Signature: _____

Booklet A	/ 20
Booklet B	/ 25
Paper 2	/ 55
Total	/ 100

Please sign and return the examination paper the next day. Any queries should be raised at the same time when returning paper.

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units asked.

5. The original price of a book was \$k. David bought 15 such books. After he was given a discount of \$10, he paid a total of \$110. What was the original price of one such book?

$$\begin{aligned}
 15k - 10 &= 110 \\
 15k &= 110 + 10 \\
 &= 120 \\
 k &= 120 \div 15 \\
 &= 8
 \end{aligned}$$

 Ans: \$ 8

2. The table below shows the charges for renting a bicycle.

Days	Time	Charge
Mon to Fri	7 a.m. to 5 p.m.	\$4 per hour
	6 p.m. to 9 p.m.	\$8 per hour
Sat and Sun	7 a.m. to 9 p.m.	\$12 per hour

On Friday, Mr Wu rented a bicycle and returned it at 6 p.m. He paid a total of \$24. For how many hours did he rent the bicycle?

$$\begin{aligned}
 \$24 - \$8 &= \$16 \quad (\$8 \rightarrow 1 \text{ h between 5 p.m. and 6 p.m.}) \\
 \$16 \div \$4 &= 4 \quad (4 \text{ h before 5 p.m.}) \\
 1 + 4 &= 5
 \end{aligned}$$

 Ans: 5 h

3. Jia Min saved some money in April. She saved \$2.50 per day for 20 days. She then saved \$3.10 per day for the rest of the month. What was the average amount of money she saved per day in April? (There are 30 days in April.)

$$\begin{aligned}
 20 \times 2.50 &= 50 \\
 10 \times 3.10 &= 31 \\
 50 + 31 &= 81 \\
 81 \div 30 &= 2.70
 \end{aligned}$$

 Ans: \$ 2.70

4. Dana bought an oven from Shop A at 15% discount during a sale. The price of the oven was \$800 before discount at Shop A. Haley bought an identical oven from Shop B at 20% discount and paid the same amount as Dana. What was the price of the oven before discount at Shop B?

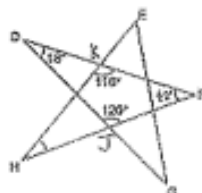
$$\begin{aligned}
 \text{Dana paid} &\rightarrow 85\% \times \$800 \\
 &= \frac{85}{100} \times \$800 \\
 &= \$680
 \end{aligned}$$

After a discount of 20%,

$$\begin{aligned}
 \text{Haley paid } 80\% \text{ for } \$680 \\
 \text{Price of shop B} &\rightarrow \frac{100}{80} \times \$680 = \$850
 \end{aligned}$$

 Ans: \$ 850

3. The figure is formed by 5 straight lines DE, EH, EG, FH and DG. Find $\angle EHF$.



$$\begin{aligned}
 \text{In } \triangle DEF, \angle DEF &= 180^\circ - 120^\circ - 10^\circ \\
 &= 42^\circ
 \end{aligned}$$

$$\begin{aligned}
 \text{In } \triangle KEH, \angle EHF &= 180^\circ - 110^\circ - 42^\circ \\
 &= 22^\circ
 \end{aligned}$$

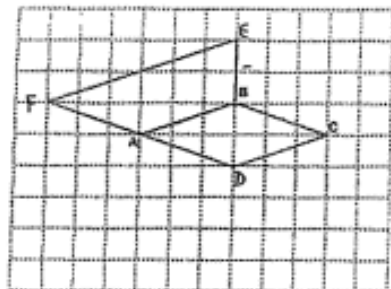
 Ans: 22

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6 In the square grid below, AB and BC are straight lines.

(a) AB and BC form two sides of a rhombus ABCD. Draw and label the rhombus ABCD. [4]

(b) AB also forms one side of a trapezium ADEF. AD is parallel to EF. The length of EF is twice the length of AB. DAF forms a straight line and AD = AF. Complete the drawing of trapezium ADEF such that it does not overlap with the rhombus. [2]



7 Peter had \$18.20 less than Jane at first. After Jane gave some of her money to Peter, he had \$29.20 more than her. How much money did Jane give to Peter?

$$\$18.20 + \$29.20 = \$47.40$$

$$\$47.40 \div 2 = \$23.70$$

Ans: \$23.70 [4]

8 Hira had a roll of blue paper and a roll of red paper. The length of the roll of blue paper is $\frac{1}{2}$ the length of the roll of red paper. She cut the roll of blue paper into equal parts of length 9 cm and on each part she drew 3 star shapes. After that, she cut the roll of red paper into equal parts of length 7 cm and on each part she drew 5 heart shapes. What fraction of the shapes Hira drew were star shapes?

Blue : Red
 Length 1 : 2
 $9 \times 7 = 2 \times (9 \times 7)$
 $63 : 126$
 $\div 9 \quad \quad \quad \div 7$
 Parts 7 : 18
 $\times 3 \quad \quad \quad \times 5$
 Shapes 21 : 90

$$\frac{21}{21+90} = \frac{21}{111}$$

Ans: $\frac{21}{111}$ [4]

9 Four towns A, B, C and D collected plastic bottles to be recycled. Town A and B collected an average of 324 plastic bottles. Town B, C and D collected an average of 344 plastic bottles. The total number of plastic bottles collected by all 4 towns was 6 times the number that town B collected. How many plastic bottles did town B collect?

$$A + B = 2 \times 324 = 648$$

$$B + C + D = 3 \times 344 = 1032$$

$$A + B + B + C + D = 648 + 1032$$

$$= 1680$$

$$3 \times B = 1680$$

$$B = 1680 \div 3$$

$$= 560$$

$$= 560$$

$$= 560$$

$$B = 1680 \div 3$$

$$= 560$$

Ans: 560 [4]

- 10 Mr Yoh left Town B and drove to Town C at 11 a.m. at a constant speed of 60 km/h. Mr Lee left Town A at 12 noon and drove to Town C at a constant speed of 80 km/h. Town A and Town B were 15 km apart. After travelling from Town A to Town B, Mr Lee then travelled to Town C along the same route as Mr Yoh. At what time did Mr Lee catch up with Mr Yoh?



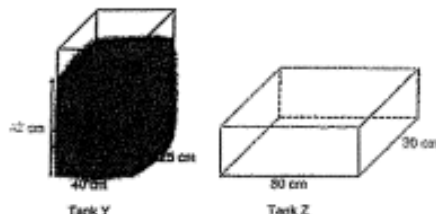
When Mr Lee left Town A at 12 noon,
Mr Yoh would be a distance away
of :-

$$\begin{aligned}
 & 15 \text{ km} + (\text{Speed} \times \text{Time}) \\
 &= 15 \text{ km} + (60 \text{ km/h} \times 1 \text{ h}) \\
 &= 15 \text{ km} + 60 \text{ km} \\
 &= 75 \text{ km}
 \end{aligned}$$

Difference in their speed
 $80 \text{ km/h} - 60 \text{ km/h}$
 $= 20 \text{ km/h}$

Time need for Mr Lee to catch up :-
 $75 \text{ km} \div 20 \text{ km/h} = 3\frac{3}{4} \text{ h}$
 $3\frac{3}{4} \text{ h}$ after 12 noon is 3.45 p.m.
 Ans: 3.45 p.m. [1]

- 11 Tank Y and Tank Z are two rectangular tanks. At first, Tank Y contained some water to a height of 42 cm and Tank Z was empty.



- (a) What was the volume of the water in Tank Y at first?

$$40 \times 25 \times 42 = 42000$$

Ans: (a) 42000 cm^3 [1]

- (b) Karolina poured some water from Tank Y into Tank Z. After that, Tank Y had $\frac{2}{5}$ as much water as Tank Z. Find the height of the water level in Tank Z.

Tank Y : Tank Z : Total
 $2 : 5 : 7$
 $42 \rightarrow 42000$
 $14 \rightarrow 42000 \div 7$
 $= 6000$
 Tank Z $\rightarrow 54 = 5 \times 6000$
 $= 30000$
 Height $= \text{Volume} \div \text{Base Area}$
 $= 30000 \div (80 \times 30)$
 $= 12.5 \text{ cm}$ Ans: (b) 12.5 cm [1]

- 12 A rectangular block A was cut along the dotted line into two smaller rectangular blocks of equal height, B and C, as shown below. The volume of block B was 4752 cm³ less than that of block C.



- (a) What was the height of each block?

$$\begin{aligned}
 & 27 - 5 = 22 \\
 & 4752 \div (22 \times 9) = 4752 \div 198 \\
 & = 24 \text{ cm (Ans)}
 \end{aligned}$$

Ans: (a) 24 cm [1]

- (b) Matthias packed 12 of block C such that they fit exactly into a box with a square base. The box had the same height as block C. How many of block B can be packed into such a box?

$$(27 \times 9) \times 12 = 2916$$

$$\sqrt{2916} = 54$$

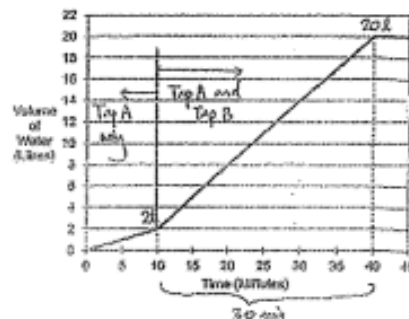
$$9 \times 6 = 54$$

$$10 \times 1 = 10$$

$$54 \div 10 = 5.4$$

Ans: (b) 64 [1]

- 13 J En filled a tank with water using two taps, Tap A and Tap B. She turned on Tap A first. After 10 minutes, she turned on Tap B. Both taps were turned off at the same time when the tank was completely filled. The graph below shows the amount of water in the tank over 45 minutes.



- (a) What was the capacity of the tank?

Tank filled from 40th minute.

Ans: (a) 20 l [1]

- (b) How many litres of water flowed from Tap B per minute?

$$\text{Tap A} \rightarrow 20 \text{ l in } 10 \text{ min}$$

$$= 2 \text{ l/min}$$

$$\text{Tap A and Tap B} \rightarrow 18 \text{ l in } 30 \text{ min}$$

$$\text{Tap B only in } 30 \text{ min} \rightarrow 18 \text{ l} - 6 \text{ l} = 12 \text{ l}$$

$$\text{Tap B} \rightarrow \frac{12 \text{ l}}{30 \text{ min}} = 0.4 \text{ l/min}$$

Ans: (b) 0.4 l [1]

- 14 Madam had some gold, some silver and some copper tokens for a carnival. The ratio of the number of gold tokens to the total number of silver and copper tokens was 10 : 9. The ratio of the number of silver tokens to the number of copper tokens was 3 : 1. She exchanged 12 gold tokens for a stuffed toy and some silver tokens for a jar of marbles. In the end, the ratio of the number of gold tokens to the number of copper tokens became 4 : 1 and the ratio of the number of silver tokens to the number of copper tokens became 4 : 3.

(a) What was the ratio of the number of gold tokens to the number of silver tokens to the number of copper tokens Madam had at first?

Before

$$\begin{array}{ccc} G : S : C & : & 10 : 9 : 1 \\ 10 : 9 : 1 & : & 3 : 1 : 1 \\ 40 : 36 : 9 & : & 4 : 3 : 1 \end{array}$$

$$G : S : C = 40 : 27 : 9$$

Ans: (a) 40 : 27 : 9 (1)

(b) How many silver tokens did Madam exchange for the jar of marbles?

After

$$\begin{array}{ccc} G : C & : & S : C \\ 4 : 1 & : & 4 : 3 \end{array}$$

Since no change for copper.

$$\begin{array}{ccc} 36 : 9 & : & 12 : 9 \\ G : S : C & : & 36 : 12 : 9 \end{array}$$

$$40 - 36 = 4$$

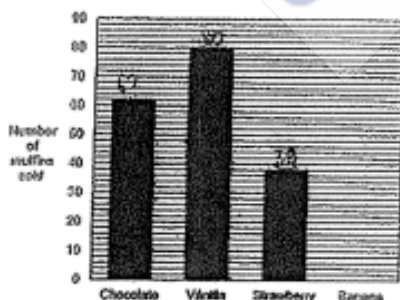
$$4 \rightarrow 12$$

$$12 \rightarrow 36$$

Ans: (b) 45 (2)

$$\begin{array}{r} 27 \times 1 = 27 \\ 15 \times 3 = 45 \end{array}$$

- 10 A shop sells four types of muffins. The bar graph shows the number of each type of muffin sold by the shop. The bar for the number of banana muffins sold has not been drawn. The number of banana muffins sold was $\frac{3}{5}$ the number of vanilla muffins sold.

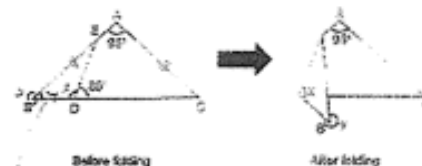


(a) How many banana muffins were sold?

$$\frac{3}{5} \times 80 = 48$$

Ans: (a) 48 (1)

- 15 ABC is a triangular piece of paper with AB = AC, $\angle BAC = 90^\circ$. AED and BDC are straight lines. The paper is then folded along the line DE as shown below.



(i) Find $\angle x$.

This is $\angle x$

$$\begin{aligned} \angle x &= 180^\circ - 80^\circ \\ &= 100^\circ \end{aligned}$$

Ans: (i) 100° (2)

(ii) Find $\angle y$.

$$\begin{aligned} \angle ABC &= (180^\circ - 90^\circ) \div 2 \\ &= 45^\circ \\ \angle y &= 360^\circ - 45^\circ \\ &= 315^\circ \end{aligned}$$

Ans: (ii) 315° (2)

- (b) The table below shows the prices of the muffins.

Type of muffin	Price per muffin
Chocolate	\$0.85
Vanilla	\$0.70
Strawberry	\$1.35
Banana	\$1.20

From the sales of which type of muffin did the shop collect the most money? What was the amount of money?

$$\text{Chocolate} \rightarrow 62 \times \$0.85 = \$52.70$$

$$\text{Vanilla} \rightarrow 80 \times \$0.70 = \$56$$

$$\text{Strawberry} \rightarrow 38 \times \$1.35 = \$51.30$$

$$\text{Banana} \rightarrow 48 \times \$1.20 = \$57.60$$

Ans: (b) Muffin: Banana

Amount: \$57.60 (2)

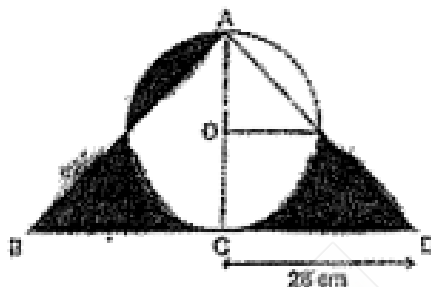
- (c) Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
The number of chocolate muffins sold was 62.	✓		
The ratio of the number of strawberry muffins sold to the number of vanilla muffins left unsold was 3 : 2.		✓	
The shop sold 48 boxes of 5 muffins.		✓	

$$48 \times 5 = 240$$

$$\text{But total muffins sold were } 62 + 80 + 38 + 48 = 228$$

- 17 The figure below is made up of a semicircle, 2 identical quarter circles and 2 identical right-angled isosceles triangles, ACB and ACD, CA = CB = CD. O is the centre of the circle. AOC and BCD are straight lines. Find the total area of the shaded parts.
 (Take $\pi = 3.14$)



$$\text{Area of Quarter Circle} \rightarrow \frac{1}{4} \times 3.14 \times 14 \times 14 = 153.86$$

$$\text{Area of small triangle} \rightarrow \frac{1}{2} \times 14 \times 14 = 98$$

$$\text{Area of half leaf} \rightarrow 153.86 - 98 = 55.86$$

$$\text{Area of big Triangle} \rightarrow \frac{1}{2} \times 28 \times 28 = 392$$

$$153.86 + 98 = 251.86$$

$$392 - 251.86 = 140.14$$

$$140.14 \times 2 = 280.28$$

$$\text{Area of shaded parts} \rightarrow 280.28 + 55.86 = 336.14$$

$$\text{Ans: } \underline{336.14 \text{ cm}^2} \quad (5)$$

End of Paper

NANYANG PRIMARY SCHOOL WA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.
(20 marks)

- 1 The number of cars is $\frac{14}{24}$ of the number of motorcycles in a carpark.
What is the ratio of the number of motorcycles to the number of cars in the carpark? Give your answer in the simplest form.

- (1) 7 : 12
- (2) 12 : 7
- (3) 14 : 24
- (4) 24 : 14

- 2 What is the value of $29\,400 \div 700$?

- (1) 32
- (2) 42
- (3) 320
- (4) 420

3 What is the value of $\frac{11}{12} + \frac{3}{4} - \frac{1}{4}$?

(1) $\frac{7}{12}$

(2) $\frac{9}{12}$

(3) $\frac{15}{12}$

(4) $\frac{17}{12}$

4 In the number line below, what is the mixed number represented by B?



(1) $11\frac{3}{4}$

(2) $11\frac{3}{5}$

(3) $11\frac{3}{8}$

(4) $11\frac{3}{10}$

5 What is the value of $\frac{1}{4} \times \frac{12}{5}$?

(1) $\frac{3}{5}$

(2) $\frac{2}{3}$

(3) $\frac{5}{16}$

(4) $\frac{5}{48}$

6 $\frac{6}{7}$ of a cake is cut equally into 12 slices. What fraction of the whole cake is each slice?

(1) $\frac{1}{14}$

(2) $\frac{1}{42}$

(3) $\frac{18}{7}$

(4) $\frac{72}{7}$

7 Which of the following is the same as 10 007 g ?

- (1) 1.07 kg
- (2) 10.07 kg
- (3) 10.007 kg
- (4) 100.07 kg

8 What is the value of $2.5 \div 500$?

- (1) 5
- (2) 0.5
- (3) 0.05
- (4) 0.005

9 There are 200 children in a camp. 130 of them are girls. What percentage of the children are boys?

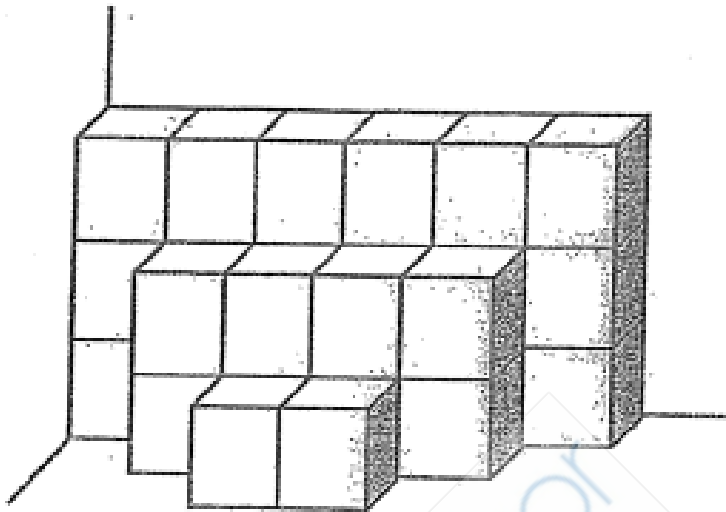
- (1) 30%
- (2) 35%
- (3) 65%
- (4) 70%

- 10 Which of the following is likely to be the mass of a Nanyang Primary School student handbook?



- (1) 20 kg
 (2) 2 g
 (3) 2000 g
 (4) 200 g
- 11 The ratio of the number of red pins to the number of yellow pins to the number of green pins is 4 : 5 : 3. The total number of yellow pins and green pins is 120. How many red pins are there?
- (1) 30
 (2) 60
 (3) 96
 (4) 160

- 12 The solid below is built using 1-cm cubes. Find the volume of the solid.

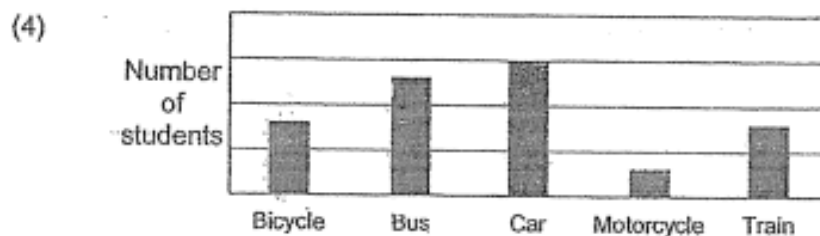
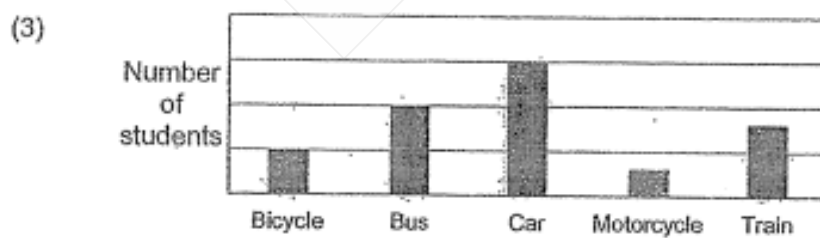
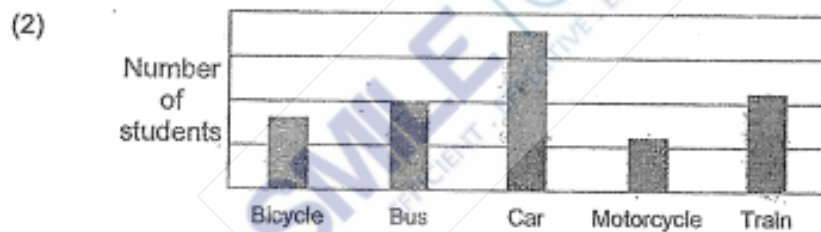
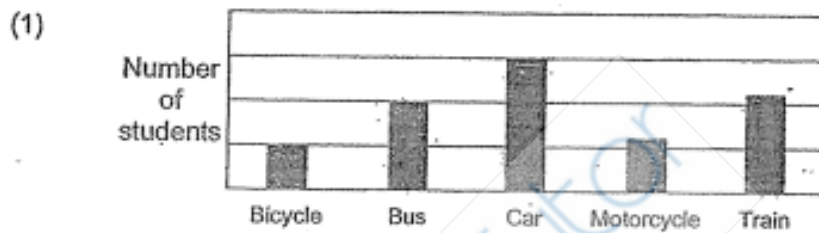


- (1) 28 cm^3
 (2) 26 cm^3
 (3) 20 cm^3
 (4) 18 cm^3

- 13 The table below shows the modes of transport used by students in Class 6E to go to school.

Mode of Transport	Bicycle	Bus	Car	Motorcycle	Train
Number of students	5	10	15	3	8

Which of the following bar graphs represents the information shown in the table above?



- 14 Mdm Nor used $\frac{1}{3}$ of her money to buy 4 oranges and 8 apples. The cost of 2 oranges was the same as that of 3 apples. What was the greatest number of apples that Mdm Nor could buy with half of the money she had at first?

- (1) 9
 (2) 14
 (3) 21
 (4) 42

- 15 A table with 4 columns is filled with numbers in a certain pattern. The first 6 rows of the table are shown below.

	Column A	Column B	Column C	Column D
Row 1	6	5	4	3
Row 2	7	8	9	10
Row 3	14	13	12	11
Row 4	15	16	17	18
Row 5	22	21	20	19
Row 6	23	24	25	26
⋮	⋮	⋮	⋮	⋮

In which column will the number 343 appear?

- (1) Column A
 (2) Column B
 (3) Column C
 (4) Column D

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

16 Find the value of $100 \div (25 - 15) + 8 \times 7$.

Ans: _____

17 Find the value of $10 \div \frac{3}{8}$. Give your answer as a mixed number in the simplest form.

Ans: _____

18 Jennie used 350 g of flour to bake 7 buns. How many such buns could she bake with 250 g of flour?

Ans: _____

- 19 Jonas has \$10. He spends 95¢ on a sandwich and 80¢ on a drink.
How much money does Jonas have left?

Ans: \$ _____

- 20 Alice and Betty donated a sum of money to charity. 40% of the sum of money was donated by Alice. Betty donated \$480. Find the total sum of money donated by Alice and Betty.

Ans: \$ _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 Mrs Ong had some potted plants at first. After she sold 240 potted plants, she was left with 20% of the potted plants she had at first. How many potted plants did she have at first?

Ans: _____

- 22 Mr Menon had $\frac{5}{6}$ kg of sugar. He packed all the sugar into packets of $\frac{5}{18}$ kg each. How many such packets of sugar did he pack?

Ans: _____

- 23 Ismail has 350 buttons. $\frac{2}{5}$ of the buttons are red and the rest are blue. How many blue buttons does he have?

Ans: _____

- 24 Four times of Ali's mass is equal to $\frac{2}{3}$ of Bala's mass. What is the ratio of Ali's mass to their total mass?

Ans: _____

- 25 Chang had 90 stickers. The ratio of the number of stickers Chang had to the number of stickers Dali had was 9 : 5. How many stickers must Chang give to Dali so that both of them would have the same number of stickers?

Ans: _____

- 26 The ratio of the number of apples to the number of oranges Jisoo had was 7 : 3 at first. After she bought 33 apples and 33 oranges, the ratio of the number of apples to the number of oranges became 5 : 3. Find the total number of apples and oranges she had at first.

Ans: _____

- 27 Rosnie had \$16 at first. After John gave \$8 to Rosnie, he had thrice as much money as Rosnie. How much money did John have in the end?

Ans: \$ _____

- 28 How many 4-digit numbers are there such that each number gives 3000 when rounded to the nearest thousand? The digits 2, 3, 5 and 0 appear once in each number.



Ans: _____

- 29 Lisa paid \$40.50 for a chocolate cake and 6 fruit tarts. Samuel paid \$25.50 for one such chocolate cake and 2 such fruit tarts. How much did one such chocolate cake cost?

Ans: \$ _____

- 30 Shop A and Shop B sell pens of four colours. The table below shows the number of pens sold by each shop in January. The number of blue pens sold by Shop A is not shown.

Colour	Number of pens sold by Shop A	Number of pens sold by Shop B
Red	140	120
Blue	?	335
Black	210	245
Purple	80	100

In January, 50% of the pens sold by Shop A were blue pens.

Each of the statements is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
Shop A sold more blue pens than Shop B in January.			
The number of black pens sold by Shop B in January was twice the number of black pens sold by Shop B in February.			
In January, 15% of the pens sold by Shop B were red pens.			

End of Paper

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 Ji Eun had $6\frac{3}{4}$ m of cloth at first. She used $3\frac{7}{10}$ m of the cloth to make some shirts. She then bought $4\frac{2}{5}$ m of cloth. How many metres of cloth did she have in the end?

Ans: _____ m

- 2 The area of a rectangle is $1\frac{11}{25}$ m². What is the total area of 4 such rectangles?

Ans: _____ m²

- 3 The price of a pair of sneakers is \$190 before GST. What is the price of the sneakers after adding 7% GST?

Ans: \$ _____

- 4 The average cost of a calculator and a storybook is \$36. The storybook costs $\frac{1}{3}$ as much as the calculator. What is the cost of the calculator?

Ans: \$ _____

- 5 At 9 a.m., a tap was turned on to fill an empty tank at a rate of 6 l per minute. At 9.05 a.m., another tap was turned on to fill the same tank at a rate of 3 l per minute. At what time were there 75 l of water in the tank?

Ans: _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6 48% of a number is 312.

(a) What is the number?

(b) What is 66% of the number?

Ans: (a) _____ [2]

(b) _____ [1]

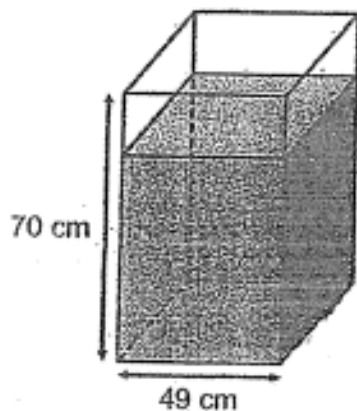
7 The prices of masks sold in a pharmacy are shown in the table below.

First 50 masks	\$8.00
Next 50 masks	\$0.15 per mask
Additional masks above 100 masks	\$0.10 per mask

Rose wants to buy 135 masks. What is the least amount of money she has to pay?

Ans: _____ [3]

- 8 A rectangular tank with a square base is $\frac{5}{7}$ -filled with water as shown below. Find the volume of water in the tank. Give your answer in litres and millilitres.



Ans: _____ [3]

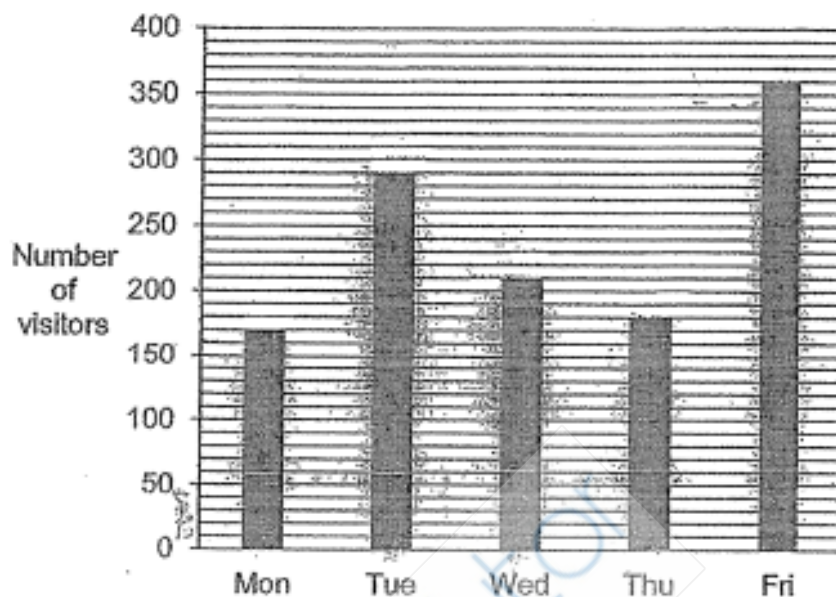
- 9 Mr Tan had 8 kg of peanuts in a sack at first. He packed the peanuts into bags. Each bag contained $\frac{3}{8}$ kg of peanuts.

- (a) What was the greatest number of bags he could fill with $\frac{3}{8}$ kg of peanuts each?
- (b) Find the mass of the peanuts left unpacked in the sack.

Ans: (a) _____ [1]

(b) _____ [2]

- 10 The bar graph below shows the number of visitors to a park from Monday to Friday last week.

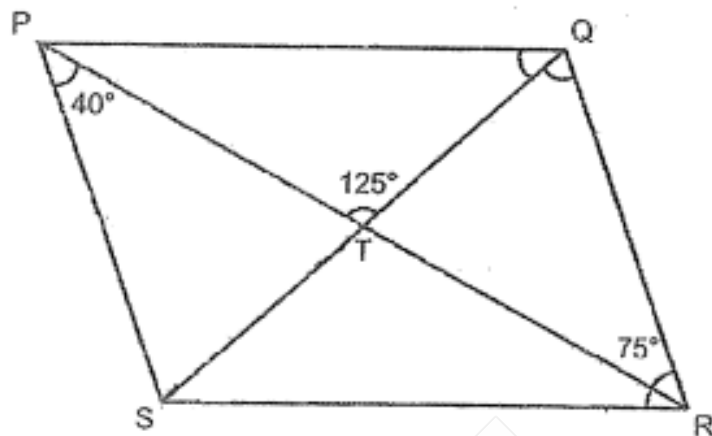


- (a) What was the average number of visitors from Monday to Friday last week?
- (b) The average number of visitors on Saturday and Sunday was twice the average number of visitors from Monday to Friday last week. Write down one possible set of values for the number of visitors on Saturday and Sunday.

Ans: (a) _____ [1]

(b) _____ [2]

- 11 PQRS is a parallelogram. PTR and STQ are straight lines.
 $\angle SPT = 40^\circ$, $\angle PTQ = 125^\circ$ and $\angle SRQ = 75^\circ$.



- (a) Find $\angle PQT$.
 (b) Find $\angle TQR$.

Ans: (a) _____ [2]

(b) _____ [2]

- 12 At first, Tze Peng baked a total of 120 chocolate cupcakes and vanilla cupcakes. The ratio of the number of chocolate cupcakes to the number of vanilla cupcakes was 1 : 3 at first. He then bought some chocolate cupcakes. After that, 60% of the total cupcakes were chocolate cupcakes.
- (a) What was the ratio of the number of vanilla cupcakes to the number of chocolate cupcakes in the end?
- (b) How many chocolate cupcakes did Tze Peng buy?

Ans: (a) _____ [1]

(b) _____ [3]

- 13 In a library, 45% of the books are English books, $\frac{3}{5}$ of the remaining books are Chinese books and the rest are Malay books. The difference between the number of Chinese books and Malay books is 176. How many English books are there in the library?



Ans: _____ [4]

- 14 The original price of a washing machine was \$1380. Iskandar bought it at a 30% discount during a sale.
- (a) How much did Iskandar pay for the washing machine?
- (b) He paid \$76.80 for a hair dryer. The total discount for the washing machine and the hair dryer was \$465.20. Express the discount for the hair dryer as a percentage of its original price.



Ans: (a) _____ [1]

(b) _____ [3]

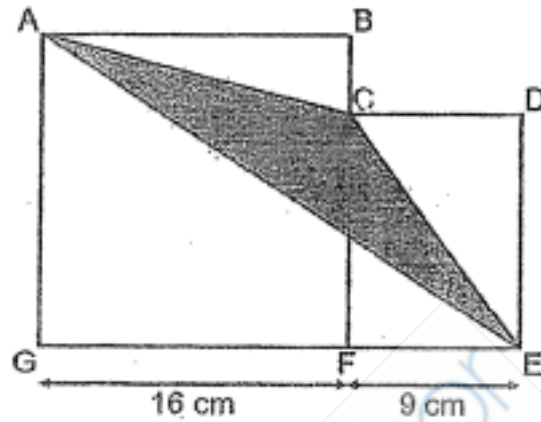
- 15 Mrs Lim had some money at first. She spent $\frac{1}{3}$ of it on a blouse and $\frac{1}{6}$ of the remaining money on a skirt. After her husband gave her \$484, she then had the same amount of money as she had at first.
- (a) How much money did she spend on the skirt?
- (b) How much money did she have at first?



Ans: (a) _____ [2]

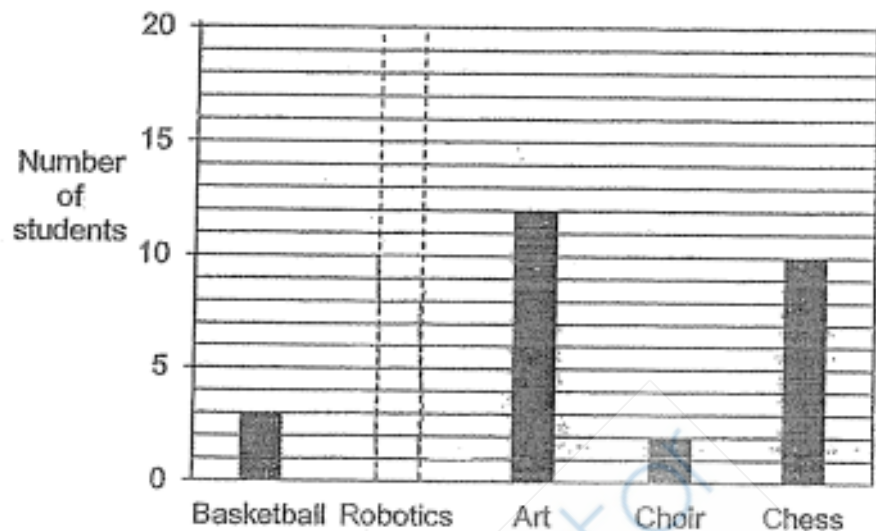
(b) _____ [2]

- 16 In the figure below, $ABFG$ is a square and $CDEF$ is a rectangle. BCF and GFE are straight lines. CF is thrice as long as BC . Find the area of triangle ACE .



Ans: _____ [5]

- 17 The bar graph below shows the Co-Curriculum Activities (CCA) the students in Class 6B joined. Every student in Class 6B joined only one CCA.



[2]

- (a) Each student in Chess CCA paid \$9 to buy a Chess CCA t-shirt. The amount of money collected from the boys was \$18 more than the amount of money collected from the girls. What was the ratio of the number of boys to the number of girls in Chess CCA? Give your answer in the simplest form.
- (b) The ratio of the number of students who joined Art CCA to the total number of students who joined Basketball CCA, Robotics CCA and Choir CCA was 4 : 5. Draw and shade the bar to show the number of students who joined Robotics CCA.

Ans: (a) _____ [3]

End of Paper

ANSWER SHEET

P6 Maths WA1 2022

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

- 1 The number of cars is $\frac{14}{24}$ of the number of motorcycles in a carpark. What is the ratio of the number of motorcycles to the number of cars in the carpark? Give your answer in the simplest form.

- (1) 7:12
(2) 12:7
(3) 14:24
(4) 24:14

$$\begin{aligned} \text{Cars} : \text{Motorcycles} &\rightarrow \text{M} : \text{C} \\ 14 : 24 &\quad 24 : 14 \\ &\div 2 \quad \div 2 \\ &\quad 12 : 7 \quad (2) \end{aligned}$$

- 2 What is the value of $20450 \div 700$?

- (1) 32
(2) 42
(3) 320
(4) 420

$$\begin{aligned} &\begin{array}{r} 294 \text{ R } 5 \\ 7 \overline{) 20450} \\ \underline{20300} \\ 150 \\ \underline{1400} \\ 1000 \\ \underline{700} \\ 300 \\ \underline{2100} \\ 900 \\ \underline{700} \\ 200 \end{array} \\ &= 42 \text{ (ans)} \quad (2) \end{aligned}$$

- 3 What is the value of $\frac{1}{4} \times \frac{12}{5}$?

- (1) $\frac{3}{5}$
(2) $\frac{2}{5}$
(3) $\frac{5}{18}$
(4) $\frac{5}{48}$

$$\frac{1}{4} \times \frac{12}{5} = \frac{3}{5} \text{ (ans)} \quad (1)$$

- 4 $\frac{6}{7}$ of a cake is cut equally into 12 slices. What fraction of the whole cake is each slice?

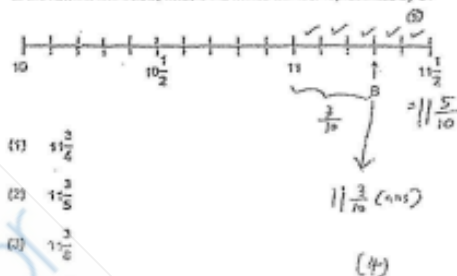
- (1) $\frac{1}{14}$
(2) $\frac{1}{42}$
(3) $\frac{16}{7}$
(4) $\frac{72}{7}$

$$\begin{aligned} &\frac{6}{7} \div 12 \\ &= \frac{6}{7} \times \frac{1}{12} \text{ (KFC)} \\ &= \frac{1}{14} \text{ (ans)} \quad (1) \end{aligned}$$

- 5 What is the value of $\frac{11}{12} \div \frac{3}{4} - \frac{1}{4}$?

$$\begin{aligned} (1) \quad &\frac{7}{12} \\ (2) \quad &\frac{9}{12} \\ (3) \quad &\frac{15}{12} \\ (4) \quad &\frac{17}{12} \end{aligned} \quad \begin{aligned} &\frac{11}{12} \div \frac{3}{4} - \frac{1}{4} \\ &= \frac{11}{12} \times \frac{4}{3} - \frac{1}{4} \\ &= \frac{11}{9} - \frac{1}{4} \\ &= \frac{44}{36} - \frac{9}{36} \\ &= \frac{35}{36} \text{ (ans)} \quad (4) \end{aligned}$$

- 6 In the number line below, what is the mixed number represented by B?



- 7 Which of the following is the same as 10 007 g?

- (1) 1.07 kg
(2) 10.07 kg
(3) 10.007 kg
(4) 100.07 kg

$$\begin{aligned} &1 \text{ kg} = 1000 \text{ g} \\ &10.007 \text{ kg} = 10 \text{ 007 g} \text{ (ans)} \quad (3) \end{aligned}$$

- 8 What is the value of $2.5 \div 500$?

- (1) 5
(2) 0.5
(3) 0.05
(4) 0.005

$$\begin{aligned} &2.5 \div 500 \\ &= 2.5 \div 5 \div 100 \\ &= 0.5 \div 100 \\ &= 0.005 \text{ (ans)} \quad (4) \end{aligned}$$

- 9 There are 200 children in a camp. 130 of them are girls. What percentage of the children are boys?

- (1) 30%
(2) 35%
(3) 65%
(4) 70%

$$\begin{aligned} &200 - 130 = 70 \text{ boys} \\ &\frac{70}{200} \times 100\% \\ &= 35\% \text{ (ans)} \quad (2) \end{aligned}$$

- 10 Which of the following is only to be the mass of a Nanyang Primary School student handbook?



- (1) 20 kg
(2) 2 g
(3) 2000 g
(4) 200 g

(4)

- 11 The ratio of the number of red pins to the number of yellow pins to the number of green pins is 4 : 5 : 3. The total number of yellow pins and green pins is 120. How many red pins are there?

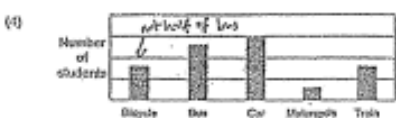
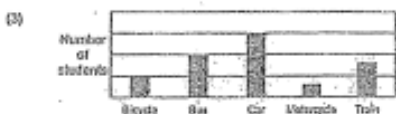
- (1) 30
(2) 60
(3) 65
(4) 100

$$\begin{aligned} R:Y:G &= 4:5:3 \\ Y+G &= 120 \\ 5+3 &= 8 \\ 8u &= 120 \quad (2) \\ 1u &= 15 \\ 4u &= 15 \times 4 = 60 \text{ (ans)} \end{aligned}$$

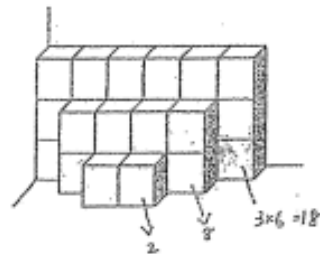
- 12 The table below shows the modes of transport used by students in Class 05 to go to school.

Mode of Transport	Bicycle	Bus	Car	Motorcycle	Train
Number of students	5	10	15	3	8

Which of the following bar graphs represents the information shown in the table above?



- 12 The solid below is built using 1-cm cubes. Find the volume of the solid.



- (1) 28 cm³
(2) 26 cm³
(3) 20 cm³
(4) 18 cm³

$$\begin{aligned} 2 + 8 + 18 &= 28 \\ 28 \text{ cm}^3 & \quad (1) \end{aligned}$$

- 14 Miss Nor used $\frac{1}{3}$ of her money to buy 4 oranges and 8 apples. The cost of 2 oranges was the same as that of 3 apples. What was the greatest number of apples that Miss Nor could buy with half of the money she had at first?

- (1) 0
(2) 14
(3) 21
(4) 42

$$\begin{aligned} \frac{1}{3} \text{ of } \$ &\rightarrow 4 \text{ oranges} + 8 \text{ apples} \\ 2 \text{ oranges} &= 3 \text{ apples} \\ 4 \text{ oranges} &= 6 \text{ apples} \\ \frac{1}{3} \text{ of } \$ &\rightarrow 6 \text{ apples} + 8 \text{ apples} \\ &= 14 \text{ apples} \\ \text{Whole} &= \frac{2}{3} \text{ of } \$ \rightarrow 14 \times 3 = 42 \text{ apples} \\ \frac{1}{2} \text{ of } \$ &\rightarrow 42 \div 2 = 21 \text{ apples (ans)} \end{aligned}$$


- 15 A table with 4 columns is filled with numbers in a certain pattern. The first 6 rows of the table are shown below.

	Column A	Column B	Column C	Column D
Row 1	0	5	4	3
Row 2	7	8	9	10
Row 3	14	13	12	11
Row 4	15	16	17	18
Row 5	22	21	20	19
Row 6	23	24	25	26

In which column will the number 33 appear?

- (1) Column A
(2) Column B
(3) Column C
(4) Column D

$$\begin{aligned} 343 \div 8 &= 42 \text{ R } 7 \\ 42 \times 8 &= 336 \text{ (Column B)} \\ &\downarrow \\ &\text{multiple of 8} \\ &7 \text{ places after } 336 \end{aligned}$$


NANYANG PRIMARY SCHOOL
TERM 1 WEIGHTED ASSESSMENT
2022
PRIMARY 6
MATHEMATICS
PAPER 1
(BOOKLET B)
 Total Duration for Booklets A and B: 1 hour

INSTRUCTIONS TO PUPILS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.
5. The use of calculators is **NOT** allowed.

Name: _____ ()

Class: Primary 6 ()

Booklet B / 25

Please sign and return the examination paper the next day. Any queries should be raised at the same time when returning paper.

16. Jeros has \$10. He spends 95¢ on a sandwich and 80¢ on a drink. How much money does Jeros have left?

$$10.00 - 0.95 - 0.80 = 8.25 \text{ (Ans)}$$

Ans: \$ 8.25

20. Alice and Betty donated a sum of money to charity. 40% of the sum of money was donated by Alice. Betty donated \$480. Find the total sum of money donated by Alice and Betty.

Sum of \$

40% Alice 100% - 40% = 60% Betty (\$480)

$$\begin{aligned}
 60\% &\rightarrow 480 \\
 10\% &\rightarrow 480 \div 6 = 80 \\
 100\% &\rightarrow 80 \times 10 = 800 \text{ (Ans)}
 \end{aligned}$$

Ans: \$ 800

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

16. Find the value of $100 \div (25 - 15) \div 2 \times 7$.

$$\begin{aligned}
 100 \div (25 - 15) \div 2 \times 7 \\
 = 100 \div 10 \div 2 \times 7 \\
 = 10 \div 2 \times 7 \\
 = 5 \times 7 = 35 \text{ (Ans)}
 \end{aligned}$$

17. Find the value of $10 \div \frac{3}{5}$. Give your answer as a mixed number in its simplest form.

$$\begin{aligned}
 10 \div \frac{3}{5} \\
 = 10 \times \frac{5}{3} \text{ (KFC)} \\
 = \frac{50}{3} = 16 \frac{2}{3} \text{ (Ans)}
 \end{aligned}$$

18. Janelle used 250 g of flour to bake 7 buns. How many such buns could she bake with 350 g of flour?

$$\begin{aligned}
 350 \div 7 &= 50 \text{ (1 bun)} \\
 250 \div 50 &= 5 \text{ buns (Ans)}
 \end{aligned}$$

Ans: 5

Questions 21 to 25 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

21. Mrs Ong had some potted plants at first. After she sold 240 potted plants, she was left with 20% of the potted plants she had at first. How many potted plants did she have at first?

$$\begin{aligned}
 ? - 240 &\rightarrow \text{left } 20\% \text{ of potted plants at } 10\% \\
 &\rightarrow \text{another } 80\% \text{ of potted plants} \\
 20\% &\rightarrow 240 \\
 10\% &\rightarrow 240 \div 2 = 120 \\
 100\% &\rightarrow 120 \times 10 = 1200 \text{ (Ans)}
 \end{aligned}$$

Ans: 1200

22. Mr Mason had $\frac{5}{6}$ kg of sugar. He packed all the sugar into packets of $\frac{5}{18}$ kg each. How many such packets of sugar did he pack?

$$\begin{aligned}
 \frac{5}{6} \div \frac{5}{18} &= \frac{5}{6} \times \frac{18}{5} \text{ (KFC)} \\
 &= 3 \text{ (Ans)}
 \end{aligned}$$

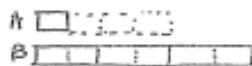
Ans: 3

23. Isreal has 320 buttons. $\frac{2}{5}$ of the buttons are red and the rest are blue. How many blue buttons does he have?

$$\begin{aligned}
 1 - \frac{2}{5} &= \frac{3}{5} \text{ (blue)} \\
 \frac{3}{5} \times 320 &= 192 \text{ (Ans)}
 \end{aligned}$$

Ans: 192

- 24 Four times of Ali's mass is equal to $\frac{2}{3}$ of Bala's mass. What is the ratio of Ali's mass to their total mass?



$$A = 4u$$

$$B = 12u$$

$$A : B = 4 : 12 = 1 : 3$$

- 25 Chang had 50 stickers. The ratio of the number of stickers Chang had to the number of stickers Dail had was 5 : 3. How many stickers must Chang give to Dail so that both of them would have the same number of stickers?

$$\begin{aligned} C &= 50 \\ D &= 30 \\ \frac{C}{D} &= \frac{50}{30} = \frac{5}{3} \\ \frac{5}{3} &= \frac{50}{30} \\ \frac{5}{3} &= \frac{50}{30} \\ \frac{5}{3} &= \frac{50}{30} \\ \frac{5}{3} &= \frac{50}{30} \end{aligned}$$

$$Ans: 20$$

- 26 The ratio of the number of apples to the number of oranges Jeco had was 7 : 3 at first. After she bought 33 apples and 33 oranges, the ratio of the number of apples to the number of oranges became 5 : 3. Find the total number of apples and oranges she had at first.

$$\begin{aligned} A &= 7u \\ O &= 3u \\ \frac{A}{O} &= \frac{7u}{3u} = \frac{7}{3} \\ \frac{A+33}{O+33} &= \frac{5}{3} \\ \frac{7u+33}{3u+33} &= \frac{5}{3} \\ 3(7u+33) &= 5(3u+33) \\ 21u+99 &= 15u+165 \\ 6u &= 66 \\ u &= 11 \\ A &= 77 \\ O &= 33 \\ Total &= 110 \end{aligned}$$

$$Ans: 110$$

- 27 Rosalee had \$18 at first. After John gave \$6 to Rosalee, he had thrice as much money as Rosalee. How much money did John have in the end?

$$\begin{aligned} R &= 18 \\ J &= 18 + 6 = 24 \\ J &= 3R \\ 24 &= 3R \\ R &= 8 \\ J &= 24 \end{aligned}$$

$$Ans: 24$$

- 28 How many 4-digit numbers are there such that each number gives 2000 when rounded to the nearest thousand? The digits 2, 3, 5 and 0 appear once in each number.

$$\begin{aligned} &2 \quad 3 \quad 5 \quad 0 \\ &0 \quad 2 \quad 5 \quad 0 \\ &0 \quad 2 \quad 5 \quad 3 \\ &0 \quad 3 \quad 0 \quad 2 \\ &0 \quad 3 \quad 0 \quad 5 \\ &0 \quad 3 \quad 2 \quad 5 \\ &0 \quad 5 \quad 2 \quad 0 \end{aligned}$$

$$Ans: 6$$

- 29 Lisa paid \$40.50 for a chocolate cake and 6 fruit tarts. Samuel paid \$25.50 for one such chocolate cake and 2 such fruit tarts. How much did one such chocolate cake cost?

$$\begin{aligned} 1C + 6T &= 40.50 \\ 1C + 2T &= 25.50 \\ 4T &= 15.00 \\ T &= 3.75 \\ 1C &= 40.50 - 6(3.75) \\ 1C &= 18.00 \end{aligned}$$

$$Ans: 18$$

- 30 Shop A and Shop B sell pens of four colours. The table below shows the number of pens sold by each shop in January. The number of blue pens sold by Shop A is not shown.

Colour	Number of pens sold by Shop A	Number of pens sold by Shop B
Red	140	120
Blue	?	335
Black	216	245
Purple	60	100

In January, 50% of the pens sold by Shop A were blue pens.

Each of the statements is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
Shop A sold more blue pens than Shop B in January.	✓		
The number of black pens sold by Shop B in January was twice the number of black pens sold by Shop A in February.		✓	
In January, 18% of the pens sold by Shop B were red pens.	✓		

$$\frac{120}{120 + 335 + 245 + 100} \times 100\% = 15\% (Ans)$$

End of Paper

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1. A bin had $6\frac{3}{4}$ m of cloth at first. She used $3\frac{7}{10}$ m of the cloth to make some quilts. She then bought $4\frac{2}{5}$ m of cloth. How many metres of cloth did she have in the end?

$$6\frac{3}{4} - 3\frac{7}{10} + 4\frac{2}{5} = 7\frac{9}{20} \text{ m (ans)}$$

Ans: $7\frac{9}{20}$ m

2. The area of a rectangle is $\frac{11}{25}$ m². What is the total area of 4 such rectangles?

$$\frac{11}{25} \times 4 = 5\frac{19}{25} \text{ m}^2 \text{ (ans)}$$

Ans: $5\frac{19}{25}$ m²

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. 48% of a number is 312.
 (a) What is the number?
 (b) What is 88% of the number?

$$\frac{66}{100} \times 650 = 429 \text{ (ans (b))}$$

Ans: (a) 650 (b) 429

7. The prices of masks sold in a pharmacy are shown in the table below.

First 50 masks	\$8.00
Next 50 masks	\$2.15 per mask
Additional masks above 100 masks	\$0.10 per mask

Rose wants to buy 135 masks. What is the least amount of money she has to pay?

$$135 \rightarrow 50 + 50 + 35$$

$$\$8 + \$0.65 \times 50 + \$0.10 \times 35$$

$$= \$8 + \$7.50 + \$3.50 = \$19 \text{ (ans)}$$

Ans: $\$19$

3. The price of a pair of sneakers is \$180 before GST. What is the price of the sneakers after adding 7% GST?

$$100\% + 7\% = 107\%$$

$$\frac{107}{100} \times 180 = \$203.30 \text{ (ans)}$$

Ans: $\$203.30$

4. The average cost of a calculator and a storybook is \$55. The storybook costs $\frac{1}{3}$ as much as the calculator. What is the cost of the calculator?

$$\text{Total} \rightarrow 36 \times 2 = 72$$

$$\begin{matrix} SB \rightarrow 14 \\ C \rightarrow 30 \end{matrix} \quad \begin{matrix} 4u = 72 \\ 1u = 18 \end{matrix}$$

$$30 + 18 \times 3 = \$54 \text{ (ans)}$$

Ans: $\$54$

5. At 9 a.m., a tap was turned on to fill an empty tank at a rate of 8 l per minute. At 9:05 a.m., another tap was turned on to fill the same tank at a rate of 3 l per minute. At what time were there 75 l of water in the tank?

Time	Rate	Volume
9 a.m.	8 l/min	8 × 5 = 40 l
9:05 a.m.	3 l/min	3 × 5 = 15 l
?	75 l (total)	

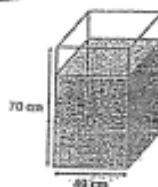
$$75 - 40 = 35$$

$$35 \div 3 = 11\frac{2}{3} \text{ min}$$

$$9:05 \text{ a.m.} + 11\frac{2}{3} \text{ min} = 9:16\frac{2}{3} \text{ a.m. (ans)}$$

Ans: $9:10 \text{ a.m.}$

8. A rectangular tank with a square base is $\frac{5}{7}$ -filled with water as shown below. Find the volume of water in the tank. Give your answer in litres and millilitres.



$$\frac{5}{7} \times 70 = 50 \text{ cm}$$

$$120 \text{ cm}^3 = 120 \text{ l}$$

Ans: $120 \text{ l } 50 \text{ ml}$

9. Mr Tan had 8 kg of peanuts in a sack at first. He packed the peanuts into bags. Each bag contained $\frac{3}{8}$ kg of peanuts.

- (a) What was the greatest number of bags he could fill with $\frac{3}{8}$ kg of peanuts each?

$$8 \div \frac{3}{8} = \frac{8}{1} \times \frac{8}{3} = 21\frac{1}{3} \approx 21 \text{ packets (ans)}$$

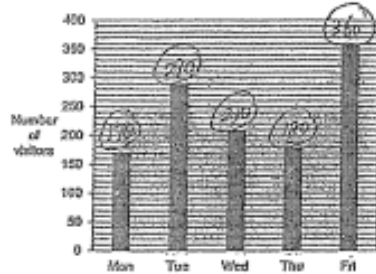
- (b) Find the mass of the peanuts left unpacked in the sack.

$$\frac{1}{8} \times \frac{3}{8} = \frac{3}{64}$$

$$\frac{1}{8} \text{ kg (ans (b))}$$

Ans: (a) 21 (b) $\frac{1}{8} \text{ kg}$

- 10 The bar graph below shows the number of visitors to a park from Monday to Friday last week.



- (a) What was the average number of visitors from Monday to Friday last week?
- (b) The average number of visitors on Saturday and Sunday was twice the average number of visitors from Monday to Friday last week. Write down one possible set of values for the number of visitors on Saturday and Sunday.

$$\frac{170 + 290 + 210 + 180 + 260}{5} = 242 \text{ (ans)}$$

$$242 \times 2 = 484 \text{ (avg of Sat + Sun)}$$

$$484 \times 2 = 968 \text{ (total of Sat + Sun)}$$

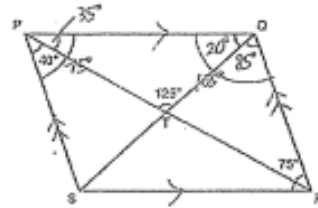
Any 2 values that add up to 968 are acceptable.

E.g. $\frac{900}{(not\ 0)}$ and $\frac{68}{(not\ 0)}$

Ans: (a) 242 (1)

(b) 900, 68 (2)

- 11 PQRS is a parallelogram. PTR and STQ are straight lines. $\angle SPT = 40^\circ$, $\angle PTQ = 125^\circ$ and $\angle SRQ = 75^\circ$.



- (a) Find $\angle PQT$.
- (b) Find $\angle TQR$.

$$\angle SPQ = \angle SRQ \text{ (opp } \angle \text{ of parallelogram)}$$

$$= 75^\circ$$

$$\angle RPQ = 75^\circ - 40^\circ$$

$$= 35^\circ$$

$$\angle PRT = 180^\circ - 35^\circ - 125^\circ$$

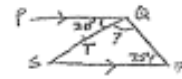
$$= 20^\circ \text{ (ans)}$$

$$\angle TQR = 180^\circ - 75^\circ$$

$$= 105^\circ$$

$$\angle TQR = 105^\circ - 20^\circ$$

$$= 85^\circ \text{ (ans)}$$



Ans: (a) 20° (1)

(b) 85° (2)

- 12 At first, Tee Peng bought a total of 120 chocolate cupcakes and vanilla cupcakes. The ratio of the number of chocolate cupcakes to the number of vanilla cupcakes was 1 : 3 at first. He then bought some chocolate cupcakes. After that, 80% of the total cupcakes were chocolate cupcakes.

- (a) What was the ratio of the number of vanilla cupcakes to the number of chocolate cupcakes in the end?

- (b) How many chocolate cupcakes did Tee Peng buy?

C	V	Total
1u	3u	4u
+	?	
60 _{2u}	40 _{1u}	100 _{3u}
= 3p	2p	5p

V : C
2 : 3 (ans)

$$4u = 120$$

$$1u = 120 \div 4$$

$$= 30$$

$$3u = 30 \times 3$$

$$= 90 \text{ Vanilla at 1st}$$

$$2p = 90$$

$$1p = 90 \div 2$$

$$= 45$$

$$3p = 45 \times 3$$

$$= 135 \text{ (ans)}$$

Ans: (a) 2:3 (1)

(b) 135 (2)

- 13 In a library, 45% of the books are English books, $\frac{3}{5}$ of the remaining books are Chinese books and the rest are Malay books. The difference between the number of Chinese books and Malay books is 176. How many English books are there in the library?

Total books

- 45% Eng
- 55% remaining (100% - 45% = 55%)
- $\frac{3}{5}$ Chinese
- $1 - \frac{3}{5} = \frac{2}{5}$ Malay

$$3u - 2u = 1u$$

$$1u = 176$$

$$5u = 176 \times 5$$

$$= 880 \text{ (remaining)}$$

$$55\% \rightarrow 880$$

$$1\% \rightarrow 880 \div 55$$

$$45\% \rightarrow 880 \div 55 \times 45$$

$$= 720 \text{ (ans)}$$

Ans: 720 (1)

- 14 The original price of a washing machine was \$1380. Iskandar bought it at a 30% discount. Express the discount as a percentage of its original price.

(a) How much did Iskandar pay for the washing machine?

(b) He paid \$76.00 for a hair dryer. The total discount for the washing machine and the hair dryer was \$453.76. Express the discount for the hair dryer as a percentage of its original price.

$$\begin{aligned} \text{Original} &\rightarrow \$1380 \\ \text{Discount} &\rightarrow 30\% \\ \text{paying} &\rightarrow 100\% - 30\% = 70\% \\ \frac{70}{100} \times \$1380 &= \$966 \text{ (ans (a))} \end{aligned}$$

Discount for washing machine

$$= \frac{30}{100} \times 1380 = \$414$$

$$453.76 - 414 = \$39.76 \text{ (discount for hair dryer)}$$

$$\text{original for hair dryer} \rightarrow \$39.76 \div 10\% = 397.6$$

% discount for hair dryer

$$\rightarrow \frac{39.76}{397.6} \times 100\% = 10\%$$

$$\begin{aligned} \text{Ans (a)} & \quad \$966 \quad [1] \\ \text{(b)} & \quad 10\% \quad [1] \end{aligned}$$

- 15 Lisa had some money at first. She spent $\frac{1}{3}$ of it on a blouse and $\frac{1}{5}$ of the remaining money on a skirt. After her husband gave her \$48, she then had the same amount of money as she had at first.

(a) How much money did she spend on the skirt?

(b) How much money did she have at first?

$$\begin{aligned} \text{Total Sum} &\rightarrow \frac{1}{3} \text{ blouse} \\ &\rightarrow \frac{1}{5} \text{ skirt} \\ &\rightarrow \frac{1}{3} - \frac{1}{5} = \frac{2}{15} \text{ Remaining} \\ &\rightarrow 1 - \frac{2}{15} = \frac{13}{15} \end{aligned}$$

\$48 → given by husband, and in the end same amount as 1st) means that skirt cost = what she was given

$$\text{Skirt} \rightarrow \frac{1}{3} \times \frac{1}{5} = \frac{1}{15}$$

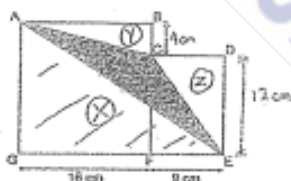
$$\frac{1}{3} + \frac{1}{15} = \frac{4}{15}$$

$$\text{blouse} = \frac{4}{15} \rightarrow 48 \div \frac{4}{15} = 180$$

$$\frac{1}{3} \rightarrow 180 \div 3 = 60$$

$$\begin{aligned} \frac{1}{5} &\rightarrow 180 \div 5 = 36 \\ \text{Ans (a)} & \quad \$36 \quad [1] \\ \text{(b)} & \quad \$180 \quad [1] \end{aligned}$$

- 16 In the figure below, ADGE is a square and CDEF is a rectangle. GDF and GFE are straight lines. CF is twice as long as GC. Find the area of triangle ACE.



$$CF = 3 \times GC$$

$$CF = 3u$$

$$BC = 1u$$

$$BF = 16 \text{ (rectangle is a square, all sides are equal)}$$

$$4u = 16$$

$$1u = 16 \div 4$$

$$= 4$$

$$3u = 4 \times 3$$

$$= 12 \text{ (CF)}$$

$$\text{Total Area} = (16 \times 16) + (12 \times 16)$$

$$= 384$$

$$X \rightarrow \frac{1}{2} \times (16+4) \times 16 = 200$$

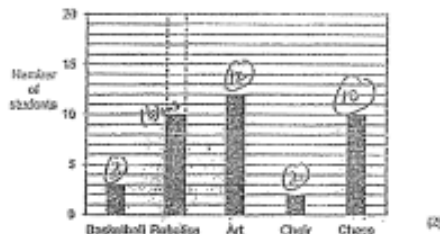
$$Y \rightarrow \frac{1}{2} \times 4 \times 16 = 32$$

$$Z \rightarrow \frac{1}{2} \times 9 \times 12 = 54$$

$$\text{Shaded} = 384 - 200 - 32 - 54 = 78 \text{ cm}^2 \text{ (ans)}$$

$$\text{Ans: } 78 \text{ cm}^2 \quad [1]$$

- 17 The bar graph below shows the Co-Curricular Activities (CCA) the students in Class 6B joined. Every student in Class 6B joined only one CCA.



- (a) Each student in Chess CCA paid \$3 to buy a Chess CCA t-shirt. The amount of money collected from the boys was \$18 more than the amount of money collected from the girls. What was the ratio of the number of boys to the number of girls in Chess CCA? Give your answer in the simplest form.

- (b) The ratio of the number of students who joined Art CCA to the total number of students who joined Basketball CCA, Robotics CCA and Choir CCA was 4:5. Draw a bar model to show the number of students who joined Robotics CCA.

$$\begin{aligned} \text{a) } 18 \div 3 &= 6 \text{ were boys, then girls in Chess.} \\ 10 \text{ pupils in Chess} \\ 10 - 6 &= 4 \\ 6 + 4 &= 10 \text{ girls} \\ 10 - 4 &= 6 \text{ boys} \\ \text{Ratio} &= 6:4 = 3:2 \text{ (ans)} \end{aligned}$$

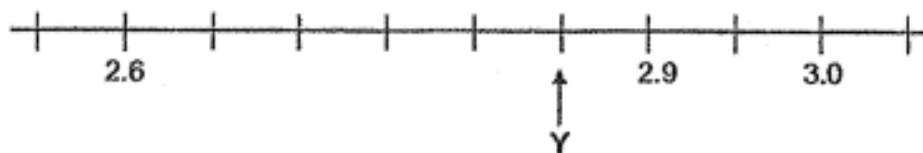
$$\begin{aligned} \text{b) } B:R+C &= 4:5 \\ 12 &= 3+R+2 = 4+R \\ R &= 12-3-2 = 7 \\ R &= 15-3-2 = 10 \text{ (Ans: 10 in graph)} \end{aligned}$$

End of Paper

NANYANG PRIMARY SCHOOL SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.
 (20 marks)

- 1 In the number line below, what is the value of Y?



- (1) 2.85
- (2) 2.8
- (3) 2.75
- (4) 2.7

- 2 Find the value of $\frac{5}{6} \div \frac{1}{4}$.

- (1) $\frac{10}{3}$
- (2) $\frac{5}{24}$
- (3) $\frac{3}{10}$
- (4) $\frac{24}{5}$

3 Which of the following is the same as 25% of 20%?

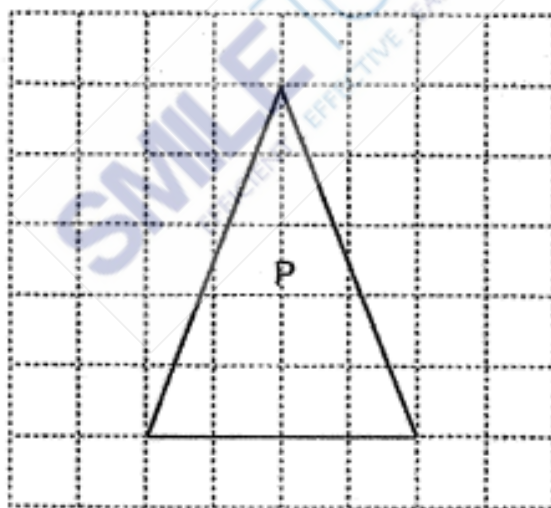
(1) $\frac{1}{4} \times \frac{1}{5}$

(2) $\frac{3}{4} \times \frac{1}{5}$

(3) $\frac{1}{4} \times \frac{4}{5}$

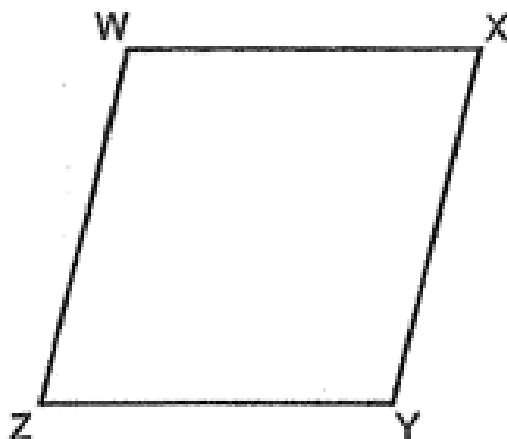
(4) $\frac{3}{4} \times \frac{4}{5}$

4 The square grid below shows Triangle P. What type of triangle is Triangle P?



- (1) Obtuse-angled triangle
- (2) Right-angled triangle
- (3) Equilateral triangle
- (4) Isosceles triangle

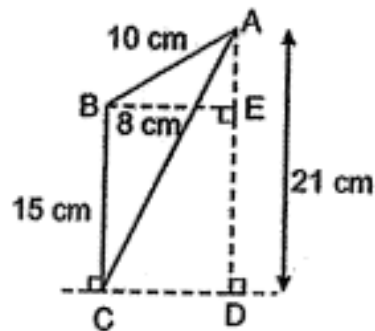
- 5 In the figure below, WXYZ is a rhombus.



Which one of the following is false?

- (1) $WX \parallel ZY$
- (2) $\angle XYZ = \angle XWZ$
- (3) $\angle WZY = \angle ZWX$
- (4) $\angle WZY + \angle XYZ = 180^\circ$

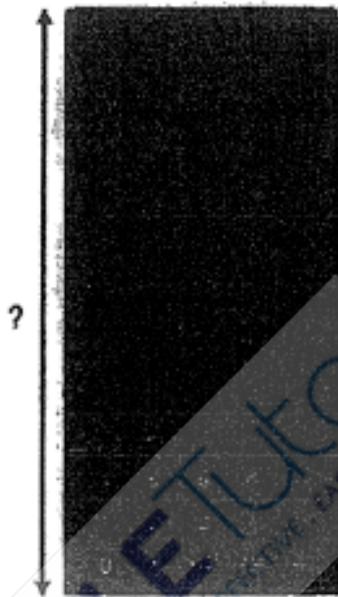
- 6 ABC is a triangle with $AB = 10$ cm and $BC = 15$ cm. $BE = 8$ cm and $AD = 21$ cm. Find the area of triangle ABC .



- (1) 40 cm^2
 - (2) 60 cm^2
 - (3) 75 cm^2
 - (4) 84 cm^2
- 7 What is the area of a circle with diameter 60 cm?
 (Take $\pi = 3.14$)

- (1) 94.2 cm^2
- (2) 188.4 cm^2
- (3) 2826 cm^2
- (4) 11304 cm^2

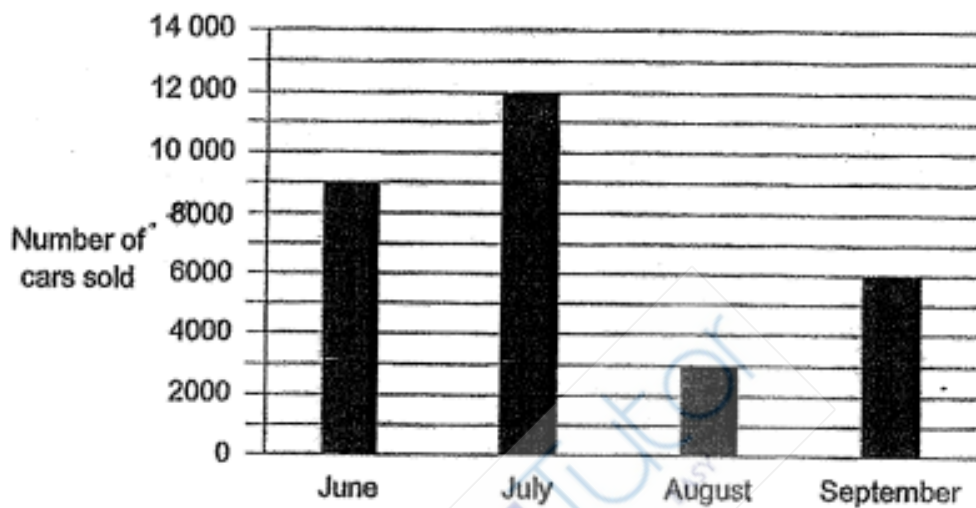
- 8 Which of the following is likely to be the length of an approved scientific calculator for PSLE?



- (1) 0.018 m
- (2) 0.18 m
- (3) 1.8 m
- (4) 18 m

Use the information below to answer questions 9 and 10.

The bar graph below shows the number of cars sold from June to September.

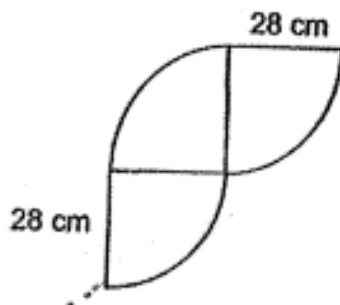


- 9 In which month was the number of cars sold half as many as the number of cars sold in September?

- (1) June
- (2) July
- (3) August
- (4) September

- 10 Which one of the following statements is true?
- (1) The number of cars sold in June was 8500.
 - (2) The number of cars sold in July is $\frac{3}{4}$ the number of cars sold in June.
 - (3) The increase in the number of cars sold from August to September was 9000.
 - (4) The total number of cars sold in June and August is the same as the number of cars sold in July.
- 11 Last month, the florist sold 800 roses. This month, she sold 1000 roses. What was the percentage increase in the number of roses sold?
- (1) 20%
 - (2) 25%
 - (3) 80%
 - (4) 200%

- 12 The figure below is made up of 3 identical quarter circles of radius 28 cm. Find its perimeter. (Take $\pi = \frac{22}{7}$)



- (1) 132 cm
 (2) 176 cm
 (3) 188 cm
 (4) 232 cm
- 13 A lollipop cost \$0.70. There were 80 lollipops in a box. Janie bought 8 such boxes of lollipops for her class party. How much did she spend on the lollipops?
- (1) \$408
 (2) \$428
 (3) \$448
 (4) \$560

- 14 An empty rectangular tank was 40 cm long, 20 cm wide and 80 cm high. Mary poured some water into it and the water level reached a height of 30 cm. How many litres of water were there in the tank?

- (1) 64 000
- (2) 24 000
- (3) 64
- (4) 24

- 15 Ranjeet and Samy made some birthday cards over two days. On Saturday, Ranjeet made 29 more cards than Samy. On Sunday, Ranjeet made another 30 cards and Samy made another 25 cards. At the end of the two days, Ranjeet made $\frac{3}{5}$ of the total number of cards. What was the total number of cards Samy made over the two days?

- (1) 34
- (2) 68
- (3) 102
- (4) 170

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

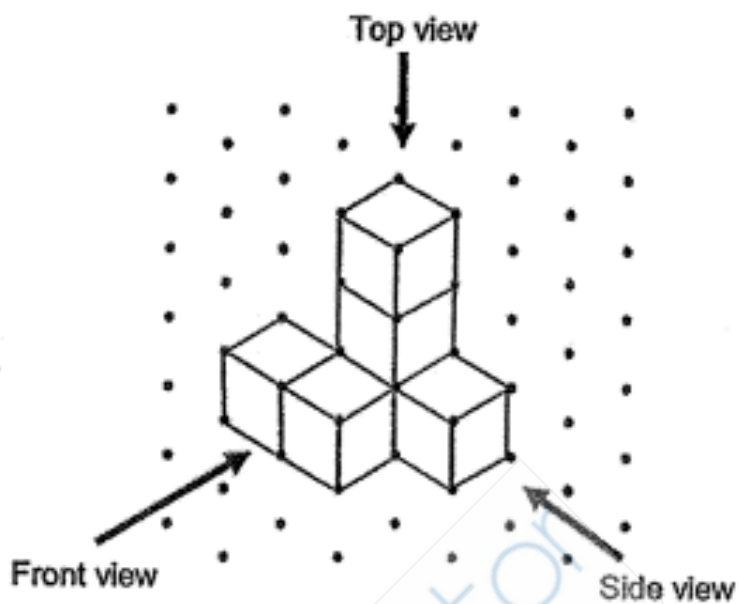
16 Express $3\frac{1}{4}$ as a decimal.

Ans: _____

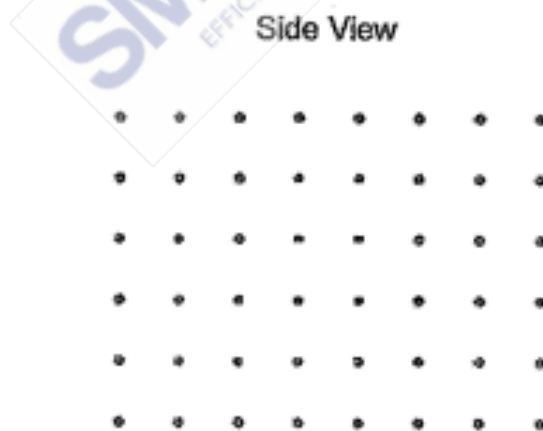
17 The volume of a cube is 125 cm^3 . Find the length of one edge of the cube.

Ans: _____ cm

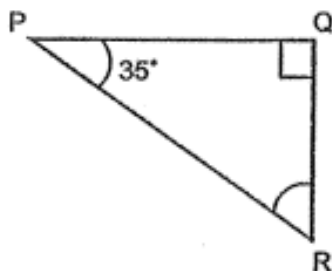
- 18 6 unit cubes were stacked and glued together to form the solid below.



Draw the side view of the solid on the grid below.

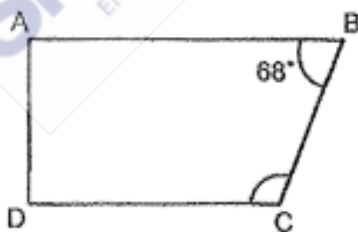


- 19 In the figure below, PQR is a right-angled triangle. $\angle QPR = 35^\circ$. Find $\angle PRQ$.



Ans: _____

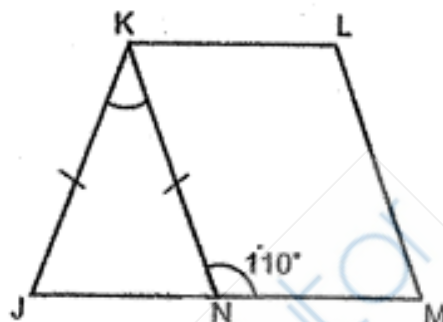
- 20 In the figure below, ABCD is a trapezium and AB is parallel to DC. $\angle ABC = 68^\circ$. Find $\angle BCD$.



Ans: _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 21 In the figure below, JKN is an isosceles triangle and $KLMN$ is a parallelogram. JNM is a straight line and $JK = KN$. $\angle KNM = 110^\circ$. Find $\angle JKN$.

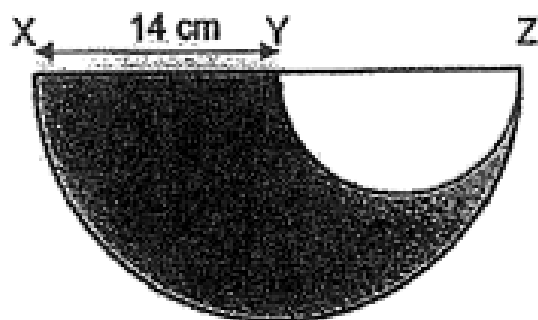


Ans: _____ °

- 22 Find the circumference of a circle of radius 5 cm. (Take $\pi = 3.14$)

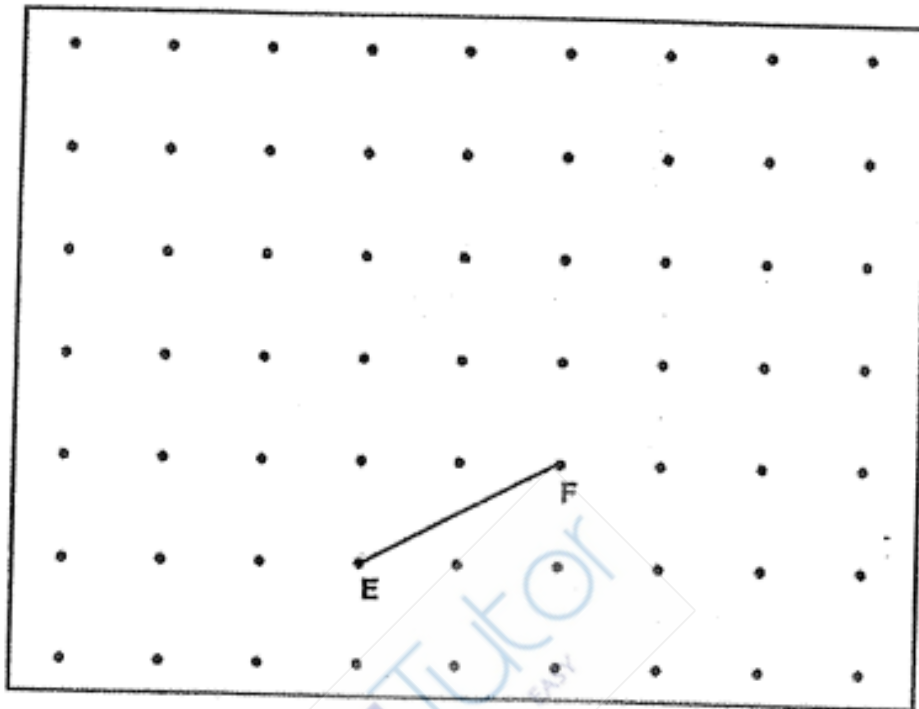
Ans: _____ cm

- 23 The figure below is made up of 2 semicircles. XY is half of XZ.
 XY = 14 cm. Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)



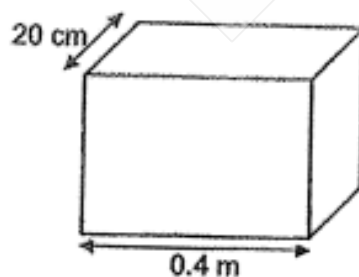
Ans: _____ cm²

- 24 A straight line EF is drawn on a square grid inside a box.



G is one of the dots inside the box. Draw two lines FG and EG to complete triangle EFG with $\angle EFG = 90^\circ$ and $EF = FG$.

- 25 A cuboid is 0.4 m long and 20 cm wide. It has a volume of 20 000 cm³. Find the height of the cuboid.



Ans: _____ cm

- 26 Two numbers add up to 364. One of the numbers is a 2-digit number and the other is a 3-digit number. What is the smallest possible difference between the two numbers?

Ans: _____

- 27 Use all the digits 7, 0, 4 and 5 to form

(a) the smallest multiple of 10

Ans: (a) _____

(b) the even number closest to 5000

Ans: (b) _____

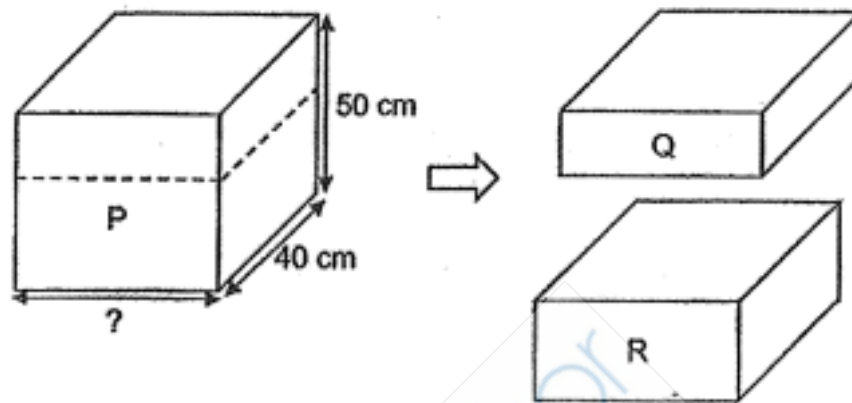
- 28 Shanice had a bottle of shampoo. She used an equal amount of shampoo each day. At the end of the 7th day, $\frac{4}{5}$ of the bottle was left. At the end of the 15th day, the amount of shampoo left was 280 ml. What was the amount of shampoo in the bottle at first?



Ans: _____ ml

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- 29 A rectangular block P was cut along the dotted line into two smaller rectangular blocks Q and R as shown below. The volume of Q was $\frac{2}{3}$ the volume of R. The difference in volume between Q and R was $12\,000\text{ cm}^3$. Find the unknown edge of block P.



Ans: _____ cm

- 30 Devi collected $\frac{5}{12}$ as many foreign coins as Haminah. Haminah collected $\frac{6}{7}$ as many foreign coins as Liling. What was the ratio of the number of foreign coins Devi collected to the number of foreign coins Liling collected?

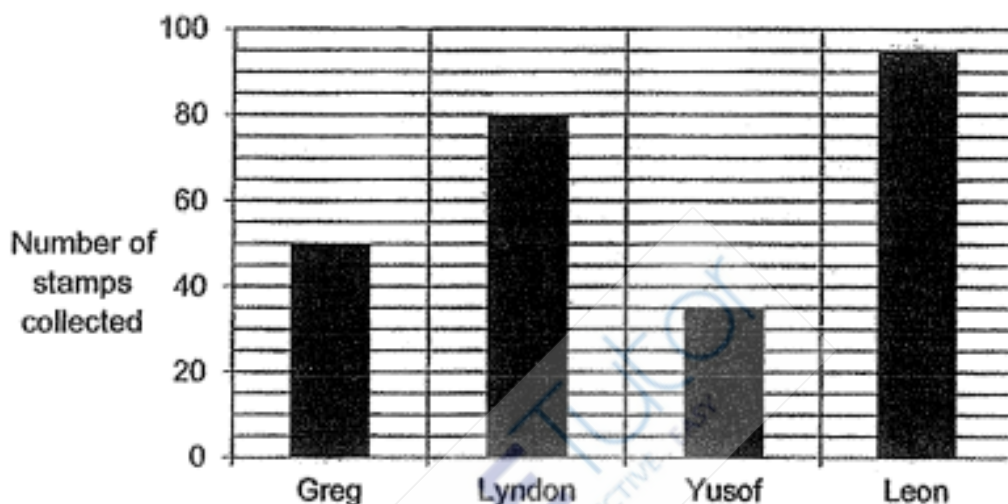


Ans: _____

End of Paper

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

- 1 The bar graph below shows the number of stamps collected by 4 boys.



Complete the table with the number of stamps collected by each boy.

Name	Number of stamps collected
Greg	50
Lyndon	
Yusof	35
Leon	

- 2 A bicycle wheel of diameter 80 cm made 3 complete turns. Find the distance covered. (Take $\pi = 3.14$)

Ans: _____ cm

- 3 Mr Tan bought a laptop. The price of the laptop before GST was \$2500. He had to pay GST of 7% on the price of the laptop. What was the amount of GST he had to pay?

Ans: \$ _____

- 4 A machine started printing brochures at 8 a.m. on Wednesday at a rate of 800 brochures per hour. After every 5 hours of printing, it would be stopped for an hour to cool down. How many brochures were printed by 6 a.m. the next day?

Ans: _____

- 5 Kendrik bought 4 different storybooks. The first storybook cost \$14 and the average cost of the remaining storybooks was $\frac{3}{7}$ of the cost of the first storybook. How much did he pay for all the storybooks?

Ans: \$ _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

- 6 The figure is made up of a rectangle and a triangle overlapping each other as shown. $\frac{1}{4}$ of the rectangle and $\frac{2}{5}$ of the triangle is unshaded. The area of the unshaded part of the figure is 57 cm^2 .



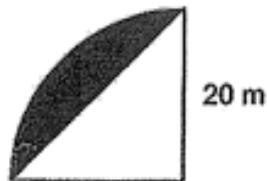
- (a) Find the area of the rectangle.

Ans: (a) _____ [1]

- (b) What fraction of the figure is unshaded?

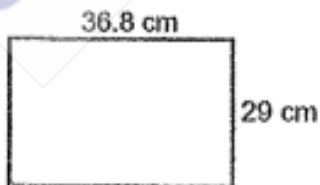
Ans: (b) _____ [2]

- 7 The figure below is made up of a quarter circle and a triangle. The radius of the quarter circle is 20 m. Find the area of the shaded part. (Take $\pi = 3.14$)



Ans: _____ [3]

- 8 Joe had a rectangular piece of paper, 36.8 cm by 29 cm, as shown below. He cut out as many squares as possible from the paper. The side of each square was 5 cm. At most, how many squares did Joe cut out?



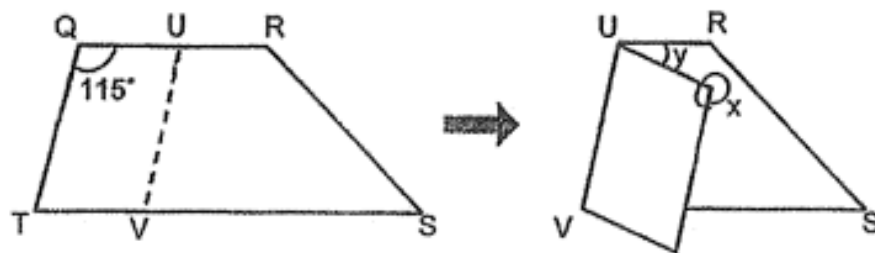
Ans: _____ [3]

- 9 Suzi formed a solid using some 2-cm, 3-cm and 5-cm cubes. She used a total of 18 cubes to form the solid. The total volume of the solid was 707 cm^3 . How many 2-cm cubes did Suzi use?



Ans: _____ [3]

- 10 The following diagram shows a piece of paper QRST in the shape of a trapezium. $\angle TQR = 115^\circ$. The paper is folded along line UV which is parallel to QT.



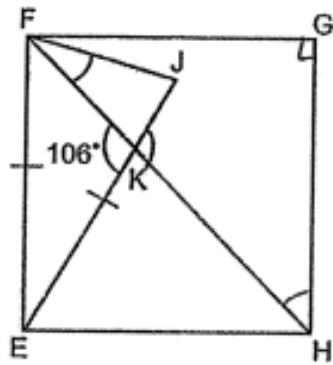
(a) Find $\angle x$.

Ans: (a) _____ [1]

(b) Find $\angle y$.

Ans: (b) _____ [2]

- 11 In the figure below, EFGH is a square. $\angle FKE = 106^\circ$ and $FE = EJ$. FKH and JKE are straight lines. Find $\angle KFJ$.



Ans: _____ [4]

- 12 There are two different shops offering the following discounts for the same bag priced at \$95 before discount.

Shop A	Shop B
 \$95 before discount	 \$95 before discount
20% discount	\$15 discount

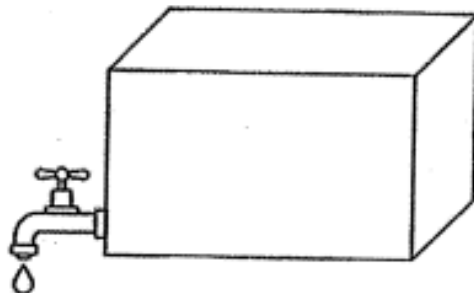
- (a) Which shop sold the bag at a lower price? Show your working clearly.

Ans: (a) Shop _____ [2]

- (b) Lisa had \$100. She bought the bag from the shop that offered a lower price. How much money did she have left?

(b) _____ [2]

- 13 A rectangular tank with a base area of 3500 cm^2 and a height of 80 cm was $\frac{1}{4}$ filled with water at first. At 8 a.m., a tap was turned on and water was drained from the tank at the rate of 4 litres per minute. At 8.06 a.m., the tap was turned off.



- (a) How much water was drained from the tank?

Ans: (a) _____ [1]

- (b) After the tap was turned off, how much more water was needed to fill the tank completely?

Ans: (b) _____ [3]

- 14 A pencil and an eraser cost \$1.05. The pencil and a ruler cost \$0.85. Bernice paid \$6.90 for 8 such pencils and 5 such erasers. Chandra paid \$3.30 for some rulers.

(a) What was the cost of one such eraser?

Ans: (a) _____ [2]

(b) How many such rulers did Chandra buy?

Ans: (b) _____ [2]

- 15 Karl had clips of four different colours. $\frac{1}{8}$ of the clips were white and $\frac{2}{7}$ of the remaining clips were red. He had an equal number of blue clips and yellow clips. Karl had 35 blue clips.

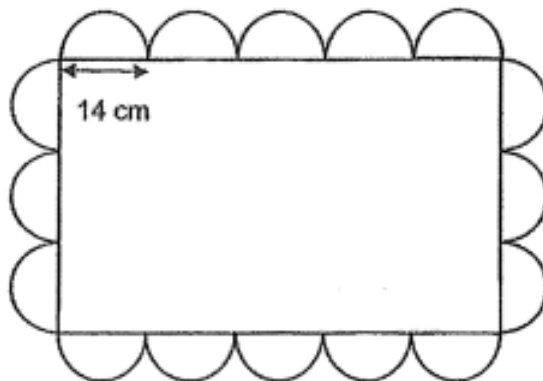
(a) How many red clips did he have?

Ans: (a) _____ [2]

- (b) Karl packed all the blue clips into small, medium, and large boxes. He filled each small box with 2 clips, each medium box with 3 clips and each large box with 6 clips. All the boxes were full and there was no clips left over. What was the least number of boxes used by Karl?

Ans: (b) _____ [2]

- 16 The figure below is made up of 16 identical semicircles and a rectangle.
 The diameter of each semicircle is 14 cm. (Take $\pi = \frac{22}{7}$)



- (a) Find the perimeter of the figure.

Ans: (a) _____ [2]

- (b) Find the area of the figure.

Ans: (b) _____ [3]

- 17 The amount of money Kathy had to the amount of money Alice had was 3 : 4. After Kathy spent \$250 on a bag and gave \$50 to Alice, the ratio became 1 : 2.

(a) How much money did Alice have at first?


Ans: (a) _____ [3]

(b) How much money did Kathy have at the end?

Ans: (b) _____ [2]

End of Paper

ANSWER SHEET


NANYANG PRIMARY SCHOOL
MID-YEAR EXAMINATION
2022
PRIMARY 6
MATHEMATICS
PAPER 1
(BOOKLET A)
 Total Duration for Booklets A and B: 1 hour
 Additional materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO PUPILS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Answer Sheet (OAS) provided.
5. The use of calculators is NOT allowed.

Name: _____ ()

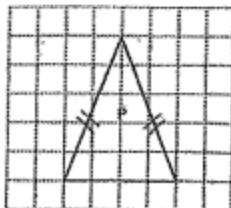
Class: Primary 6 ()

3. Which of the following is the same as 25% of 20%?

$$\begin{aligned}
 & 25\% \times 20\% \\
 & = \frac{25}{100} \times \frac{20}{100} \\
 & = \frac{1}{4} \times \frac{1}{5} \quad (1)
 \end{aligned}$$

(1) $\frac{1}{4} \times \frac{1}{5}$
 (2) $\frac{1}{4} \times \frac{1}{5}$
 (3) $\frac{1}{4} \times \frac{4}{5}$
 (4) $\frac{1}{4} \times \frac{4}{5}$

4. The square grid below shows Triangle P. What type of triangle is Triangle P?

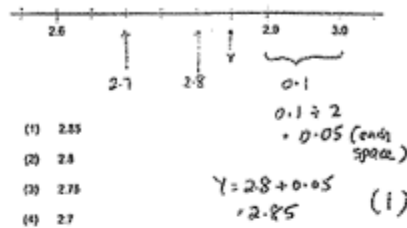


- (1) Obtuse-angled triangle
 (2) Right-angled triangle
 (3) Equilateral triangle
 (4) Isosceles triangle

(4)

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Shade your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (20 marks)

1. In the number line below, what is the value of Y?

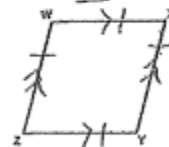


2. Find the value of $\frac{5}{6} \div \frac{1}{6}$.

$$\begin{aligned}
 & \frac{5}{6} \div \frac{1}{6} \quad (\text{KFC}) \\
 & = \frac{5}{6} \times \frac{6}{1} \\
 & = \frac{10}{1} = 10 \quad (1)
 \end{aligned}$$

(1) $\frac{10}{3}$
 (2) $\frac{5}{24}$
 (3) $\frac{3}{10}$
 (4) $\frac{24}{5}$

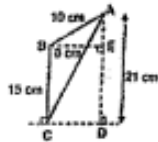
5. In the figure below, WXYZ is a rhombus.



Which one of the following is false?

- (1) $WX \parallel ZY$ — True
 (2) $\angle XYZ = \angle XWZ$ — True
 (3) $\angle WZY = \angle ZWX$ — False
 (4) $\angle WXY + \angle XYZ = 180^\circ$ — True

6. $\triangle ABC$ is a triangle with $AB = 10$ cm and $BC = 15$ cm. $DE = 8$ cm and $AD = 21$ cm. Find the area of triangle ABC .



- (1) 40 cm^2
 (2) 60 cm^2
 (3) 75 cm^2
 (4) 84 cm^2

base \perp ht
 $BC \perp BE$
 $\frac{1}{2} \times \frac{15}{1} \times \frac{8}{1}$
 $= 60 \quad (2)$

7. What is the area of a circle with diameter 60 cm? $d=60, r=30$
 (Take $\pi = 3.14$)

- (1) 94.2 cm^2
 (2) 188.4 cm^2
 (3) 2826 cm^2
 (4) 11304 cm^2

Area $= \pi r^2$
 $= 3.14 \times 30 \times 30$
 $= 3.14 \times 3 \times 3 \times 100$
 $= 28.26 \times 100$
 $= 2826 \quad (3)$

8. Which of the following is likely to be the length of an approved scientific calculator for PSLE?

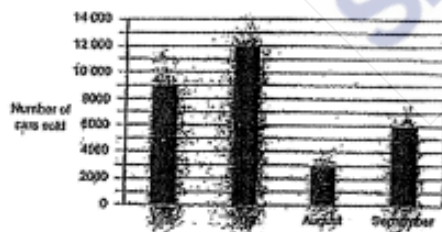


- (1) 0.018 m
 (2) 0.18 m
 (3) 1.8 m
 (4) 18 m

length \approx short ruler
 length
 so the length
 not more than 20 cm
 or 0.2 m
 (2)

Use the information below to answer questions 9 and 10.

The bar graph below shows the number of cars sold from June to September.



9. In which month was the number of cars sold half as many as the number of cars sold in September?

- (1) June
 (2) July
 (3) August
 (4) September

Sep $\rightarrow 6000$
 $6000 \div 2 = 3000$
 (August)
 (3)

10. Which one of the following statements is true?

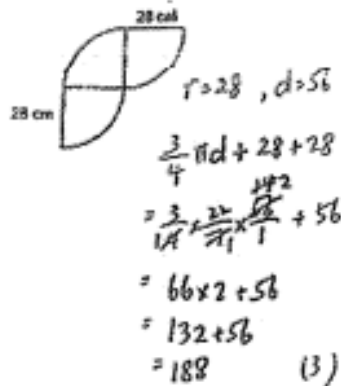
- (1) The number of cars sold in June was 8500. (false)
 (2) The number of cars sold in July is $\frac{3}{4}$ the number of cars sold in June.
 $12000 \div 8000 = 1.5$
 $1.5 \times 8000 = 12000$ (false)
 (3) The increase in the number of cars sold from August to September was 8000.
 $6000 - 3000 = 3000$ (false)
 (4) The total number of cars sold in June and August is the same as the number of cars sold in July.
 $10000 + 3000 = 13000$
 12000 (true)
 (2)

11. Last month, the dealer sold 800 roses. This month, she sold 1000 roses. What was the percentage increase in the number of roses sold?

(1) 20%
 (2) 25%
 (3) 80%
 (4) 200%

$\frac{\uparrow}{\text{original}} \times 100\%$
 $= \frac{1000-800}{800} \times 100\%$
 $= \frac{200}{800} \times 100\%$
 $= \frac{25}{80} \times 100\%$
 $= 25\% \quad (2)$

- 12 The figure below is made up of 3 identical quarter circles of radius 28 cm. Find its perimeter. (Take $\pi = \frac{22}{7}$)



- (1) 132 cm
(2) 178 cm
(3) 188 cm
(4) 232 cm

- 13 A lollipop cost \$0.70. There were 80 lollipops in a box. Julie bought 8 such boxes of lollipops for her class party. How much did she spend on the lollipops?

- (1) \$406
(2) \$428
(3) \$448
(4) \$500

$$\begin{aligned} & 0.7 \times 80 \times 8 \\ &= 0.7 \times 8 \times 10 \times 8 \\ &= 5.6 \times 10 \times 8 \\ &= 56 \times 8 \\ &= 448 \end{aligned} \quad (3)$$

- 14 An empty rectangular tank was 40 cm long, 20 cm wide and 80 cm high. Mary poured some water into it and the water level reached a height of 30 cm. How many litres of water were there in the tank?

(1) 10000
(2) 24000
(3) 64
(4) 24

$$\begin{aligned} & (40 \times 20 \times 30) \text{ cm}^3 \\ &= (8 \times 3 \times 3) \times 1000 \text{ cm}^3 \\ &= 24 \times 1000 \text{ cm}^3 \\ &= 24 \text{ L} \end{aligned} \quad (3)$$

- 15 Rajjeet and Sany made some birthday cards over two days. On Saturday, Rajjeet made 20 more cards than Sany. On Sunday, Rajjeet made another 30 cards and Sany made another 25 cards. At the end of the two days, Rajjeet made $\frac{3}{5}$ of the total number of cards. What was the total number of cards Sany made over the two days?

(1) 34
(2) 68
(3) 102
(4) 170

Sat	Sun	
S → 1 unit	+ 25	→ $\frac{2}{5}$ of total
R → 1 unit + 20	+ 30	→ $\frac{3}{5}$ of total
<hr/>		
Compare S + R		
(20 + 30) - 25		→ $\frac{1}{5}$ of total
50 - 25		
= 25		→ $\frac{1}{5}$ of total
(2)	25 × 2	→ $\frac{2}{5}$ of total
		= 50

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

16 Express $3\frac{1}{4}$ as a decimal.

$$3\frac{1}{4} \times \frac{25}{25} = 3\frac{25}{100} \\ = 3.25 \text{ (ans)}$$

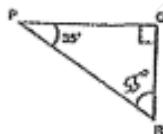
Ans: 3.25

17 The volume of a cube is 125 cm^3 . Find the length of one edge of the cube.

$$\sqrt[3]{125} = 5 \text{ cm (ans)}$$

Ans: 5 cm

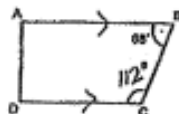
19 In the figure below, PQR is a right-angled triangle. $\angle QPR = 35^\circ$. Find $\angle PRQ$.



$$90^\circ - 35^\circ = 55^\circ \text{ (ans)}$$

Ans: 55

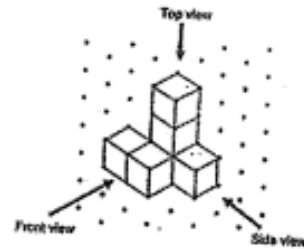
20 In the figure below, ABCD is a trapezium and AB is parallel to DC. $\angle ADC = 68^\circ$. Find $\angle BCD$.



$$180^\circ - 68^\circ = 112^\circ \text{ (ans)}$$

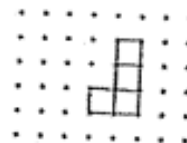
Ans: 112

18 6 unit cubes were stacked and glued together to form the solid below.



Draw the side view of the solid on the grid below.

Side View



Use dark pencil
and ruler to draw

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

21 In the figure below, JMN is an isosceles triangle and KLMN is a parallelogram. JMN is a straight line and JK = KN. $\angle KMN = 110^\circ$. Find $\angle JKN$.



$$180^\circ - 110^\circ = 70^\circ \\ 180^\circ - 70^\circ - 70^\circ = 40^\circ \text{ (ans)}$$

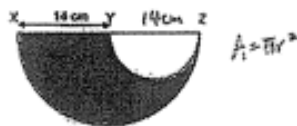
Ans: 40

22 Find the circumference of a circle of radius 5 cm. (Take $\pi = 3.14$)

$$r = 5, d = 10 \\ \pi d \\ = 3.14 \times 10 \\ = 31.4 \text{ cm (ans)}$$

Ans: 31.4 cm

- 23 The figure below is made up of 8 semicircles. XY is half of PQ .
 $XY = 14$ cm. Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)



d. of small $\odot = 14$ cm

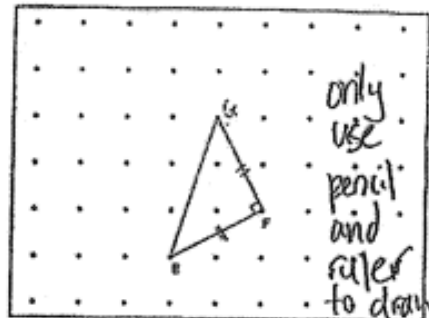
r. of small $\odot = 7$ cm

r. of big $\odot = 14$ cm

$$\begin{aligned} \text{Shaded area} &= \left(\frac{1}{2} \times \frac{22}{7} \times 14^2 \right) - \left(8 \times \frac{1}{2} \times \frac{22}{7} \times 7^2 \right) \\ &= (22 \times 14) - 77 \\ &= 308 - 77 \\ &= 231 \text{ (Ans)} \\ &\quad \text{cm}^2 \end{aligned}$$

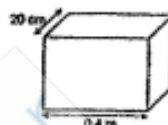
Ans: 231 cm²

- 24 A straight line EF is drawn on a square grid inside a box.



G is one of the dots inside the box. Draw two lines FG and EG to complete triangle EFG with $\angle EFG = 90^\circ$ and $EF = FG$.

- 25 A cuboid is 0.4 m long and 20 cm wide. It has a volume of 20 000 cm³. Find the height of the cuboid.



$$\begin{aligned} 0.4 \text{ m} &= 40 \text{ cm} \\ \frac{20 \times 40 \times \text{height}}{1000} &= 20000 \\ \text{height} &= 25 \text{ cm} \end{aligned}$$

Ans: 25 cm

- 26 Two numbers add up to 364. One of the numbers is a 2-digit number and the other is a 3-digit number. What is the smallest possible difference between the two numbers?

$$\underline{\quad\quad} + \underline{\quad\quad} = 364$$

To get the smallest possible difference
 → 3-digit number must be as small as possible
 and 2-digit number must be as large as possible.

Hence, 2-digit number → 99

$$\begin{aligned} 364 - 99 &= 265 \\ \text{so, diff} &\rightarrow 265 - 99 = 166 \text{ (Ans)} \end{aligned}$$

- 27 Use all the digits 7, 0, 4 and 5 to form

(a) the smallest multiple of 10

ones digit must be 0
 so arrange the rest of the digits from smallest to largest

$$\underline{4570} \text{ (Ans)} \quad \underline{4570}$$

(b) the even number closest to 5000

ones digit must be either 0 or 4
 ∴ close to 5000, number must be more than 4000 and less than 6000.

possible → 4750 or 5470 or 5074
 but 5074 is closest to 5000
 Ans: (b) 5074

- 28 Charles had a bottle of shampoo. She used an equal amount of shampoo each day. At the end of the 7th day, $\frac{4}{5}$ of the bottle was left. At the end of the 15th day, the amount of shampoo left was 280 ml. What was the amount of shampoo in the bottle at first?

7 days → used $\frac{1}{5}$ of bottle ($1 - \frac{4}{5} = \frac{1}{5}$)

1 day → used $\frac{1}{5} \div 7$

$$= \frac{1}{5} \times \frac{1}{7}$$

$$= \frac{1}{35}$$

15 days → $\frac{1}{35} \times 15 = \frac{3}{7}$ used

$$1 - \frac{3}{7} = \frac{4}{7}$$

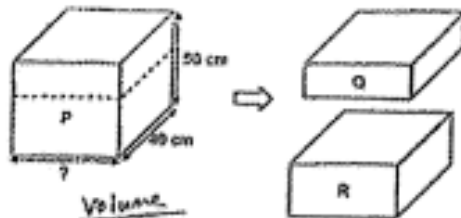
$\frac{4}{7}$ of bottle → 280

$\frac{1}{7}$ of bottle → $280 \div 4 = 70$

$\frac{2}{7}$ of bottle → $70 \times 7 = 490$ ml (Ans)

Ans: 490 ml

- 29 A rectangular block P was cut along the dotted line into two smaller rectangular blocks Q and R as shown below. The volume of Q was $\frac{2}{3}$ the volume of R. The difference in volume between Q and R was 12 000 cm³. Find the unknown edge of block P.



Volume
 $Q : R$
 $2 : 3$
 $3u - 2u = 1u$
 $1u = 12000$
 $Q + R = P$
 $2u + 3u = 5u$
 $5u = 12000 \times 5$
 $= 60000$
 $\frac{60000}{200} = 300$
 $\frac{300}{10} = 30 \text{ (cm)}$

Ans: 30 cm

- 30 Devi collected $\frac{5}{12}$ as many foreign coins as Hanirah. Hanirah collected $\frac{6}{7}$ as many foreign coins as Ling. What was the ratio of the number of foreign coins Devi collected to the number of foreign coins Ling collected?

$D : H$
 $5 : 12$
 $H : L$
 $6 : 7$
 $\times 2 \quad \times 2$
 $= 12 : 14$

(Common identity $\rightarrow H$)

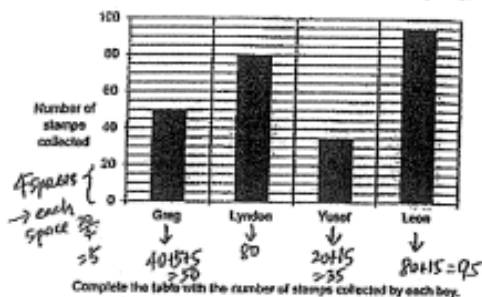
$D : L$
 $5 : 14 \text{ (ans)}$

Ans: 5:14

End of Paper

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1 The bar graph below shows the number of stamps collected by 4 boys.



Name	Number of stamps collected
Greg	50
Lyndon	80
Yusof	35
Leon	95

4 A machine started printing brochures at 8 a.m. on Wednesday at a rate of 800 brochures per hour. After every 5 hours of printing, it would be stopped for an hour to cool down. How many brochures were printed by 6 a.m. the next day?

8 a.m. (Wed) 5h 1pm 5h 6pm 5h 11pm 5h 4am (next day) 1h 6am (next day)

Total hours $\rightarrow 5 + 5 + 5 + 4$
 printing = 19
 $19 \times 800 = 15200$ (ans)

Ans: 15200

5 Kendrik bought 4 different storybooks. The first storybook cost \$14 and the average cost of the remaining storybooks was $\frac{3}{7}$ of the cost of the first storybook. How much did he pay for all the storybooks?

$$\frac{3}{7} \times 14 = 6$$

$$6 \times 3 = 18$$

$$18 + 14 = 32 \text{ (ans)}$$

Ans: 32

2 A bicycle wheel of diameter 80 cm made 3 complete turns. Find the distance covered. (Take $\pi = 3.14$)

$$d = 80$$

$$\text{Distance} = \pi d \times 3$$

$$= 3.14 \times 80 \times 3$$

$$= 753.6 \text{ cm (ans)}$$

Ans: 753.6 cm

3 Mr Tan bought a laptop. The price of the laptop before GST was \$2500. He had to pay GST of 7% on the price of the laptop. What was the amount of GST he had to pay?

$$\frac{7}{100} \times 2500 = 175 \text{ (ans)}$$

Ans: 175

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (46 marks)

6 The figure is made up of a rectangle and a triangle overlapping each other as shown. $\frac{1}{4}$ of the rectangle and $\frac{2}{5}$ of the triangle is unshaded. The area of the unshaded part of the figure is 57 cm².



(a) Find the area of the rectangle.

$$2u = 57$$

$$8u = \frac{57}{2} \times 8$$

$$= 228 \text{ cm}^2$$

(ans)

Ans: (a) 228 cm² [1]

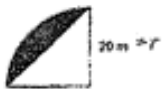
(b) What fraction of the figure is unshaded?

$$\frac{\text{Unshaded}}{\text{Total}} = \frac{2}{6+2+3}$$

$$= \frac{2}{11} \text{ (ans)}$$

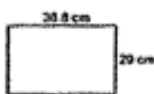
Ans: (b) $\frac{2}{11}$ [2]

- 7 The figure below is made up of a quarter circle and a triangle. The radius of the quarter circle is 20 m. Find the area of the shaded part. (Take $\pi = 3.14$)



$$\begin{aligned} \text{Area of circle} &= \pi r^2 \\ \text{shaded area} &= \text{Area of Quarter circle} \\ &\quad - \text{Area of triangle} \\ &= \frac{1}{4}\pi r^2 - \frac{1}{2}bh \\ &= \left(\frac{1}{4} \times 3.14 \times 20 \times 20\right) - \left(\frac{1}{2} \times 20 \times 20\right) \\ &= \frac{114\pi}{\text{Ans}} = 114\pi \text{ m}^2 \quad [1] \end{aligned}$$

- 8 Joe had a rectangular piece of paper, 36.8 cm by 20 cm, as shown below. He cut out as many squares as possible from the paper. The side of each square was 5 cm. At least, how many squares did Joe cut out?



$$\begin{aligned} 36.8 \div 5 &\approx 7 \\ 20 \div 5 &\approx 4 \\ 7 \times 5 &= 35 \text{ (Ans)} \end{aligned}$$

Ans: 35 [1]

- 10 The following diagram shows a piece of paper OQRT in the shape of a trapezium. $\angle QTR = 115^\circ$. The paper is folded along line UV which is parallel to QT.



- (a) Find $\angle x$.

$$360^\circ - 115^\circ = 245^\circ \text{ (Ans)}$$

Ans: (a) 245 [1]

- (b) Find $\angle y$.

$$\begin{aligned} 180^\circ - 115^\circ &= 65^\circ \\ 180^\circ - 65^\circ - 65^\circ &= 50^\circ \text{ (Ans)} \end{aligned}$$

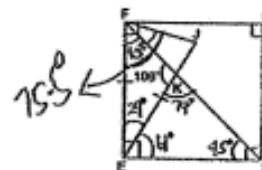
Ans: (b) 50 [1]

- 9 Suri formed a solid using some 2-cm, 3-cm and 5-cm cubes. She used a total of 18 cubes to form the solid. The total volume of the solid was 707 cm³. How many 2-cm cubes did Suri use?

$$\begin{aligned} 2 \times 2 \times 2 &= 8 \\ 3 \times 3 \times 3 &= 27 \\ 5 \times 5 \times 5 &= 125 \\ 707 \div 125 &\approx 5.656 \\ &\text{estimate a number of 5-cm cubes} \\ &\text{So guess + check.} \\ \textcircled{1} 5 \times 125 &= 625 \\ 707 - 625 &= 82 \\ 1 \times 8 + \frac{3}{5} \times 27 &\approx 82 \\ &\text{trying all possible numbers, cannot get 82} \\ \textcircled{2} 4 \times 125 &= 500 \text{ (4 5-cm cubes)} \\ 707 - 500 &= 207 \text{ (Note: 18 cubes - 4 cubes = 14 cubes left)} \\ 5 \times 27 + 4 \times 8 &= 207 \\ (5 \times 3\text{-cm cubes}) + (4 \times 2\text{-cm cubes}) &= 207 \\ \text{last check} &\rightarrow 4 + 5 + 9 = 18 \text{ cubes } \checkmark \\ &\rightarrow (4 \times 125) + (5 \times 27) + (9 \times 8) = 707 \checkmark \end{aligned}$$

Ans: 9 [1]

- 11 In the figure below, EFGH is a square. $\angle FKE = 100^\circ$ and $FE = EJ$. PQT and JKE are straight lines. Find $\angle HJF$.



$$180^\circ - 106^\circ = 74^\circ$$

$$180^\circ - 74^\circ - 45^\circ = 61^\circ$$

$$90^\circ - 61^\circ = 29^\circ$$

$$\frac{180^\circ - 29^\circ}{2} = 75.5^\circ$$

$$75.5^\circ - 45^\circ = 30.5^\circ \text{ (Ans)}$$

Ans: 30.5 [1]

- 12 There are two different shops offering the following discounts for the same bag priced at \$95 before discount.



- (a) Which shop sold the bag at a lower price? Show your working clearly.

$$\begin{aligned}
 A \rightarrow \text{discount} &= \frac{20}{100} \times 95 \\
 &= \$19 \quad \checkmark \text{ more discount, so price lower} \\
 B \rightarrow \text{discount} &= \$15 \quad \text{as both usual prices are the same.}
 \end{aligned}$$

Ans: (a) Shop A

- (b) Lisa had \$100. She bought the bag from the shop that offered a lower price. How much money did she have left?

$$\begin{aligned}
 95 - 19 &= 76 \\
 \$100 - \$76 &= \$24 \text{ (ans)}
 \end{aligned}$$

(b) \$24

- 14 A pencil and an eraser cost \$1.05. The pencil and a ruler cost \$0.85. Bonnie paid \$8.00 for 8 such pencils and 8 such erasers. Chenda paid \$3.30 for some rulers.

- (a) What was the cost of one such eraser?

$$\begin{aligned}
 1P + 1E &= 1.05 \\
 1P + 1R &= 0.85 \\
 \hline
 8P + 8E &= 1.05 \times 8 \\
 &= 8.40 \\
 8P + 8R &= 0.85 \times 8 \\
 &= 6.80 \\
 \hline
 8E - 8R &= 8.40 - 6.80 \\
 &= 1.60 \\
 8E &= 1.60 + 6.80 \\
 &= 8.40 \\
 1E &= 1.05 \\
 &= \$0.50 \text{ (ans)}
 \end{aligned}$$

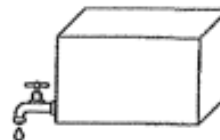
Ans: (a) \$0.50

- (b) How many such rulers did Chenda buy?

$$\begin{aligned}
 1P &= 1.05 - 0.5 \\
 &= 0.55 \\
 1R &= 0.85 - 0.55 \\
 &= 0.30 \\
 3.3 \div 0.3 &= 11 \text{ (ans)}
 \end{aligned}$$

Ans: (b) 11

- 13 A rectangular tank with a base area of 3500 cm² and a height of 80 cm was $\frac{1}{4}$ filled with water at first. At 8 a.m., a tap was turned on and water was drained from the tank at the rate of 4 litres per minute. At 8.06 a.m., the tap was turned off.



- (a) How much water was drained from the tank?

$$\begin{aligned}
 8 \text{ a.m.} &\rightarrow 8.06 \text{ a.m.} \\
 &6 \text{ min} \\
 6 \times 4 \text{ L} &= 24 \text{ L (ans)}
 \end{aligned}$$

Ans: (a) 24 L

- (b) After the tap was turned off, how much more water was needed to fill the tank completely?

$$\begin{aligned}
 \frac{1}{4} \times 3500 \times 80 &= 70000 \\
 70000 - 24000 &= 46000 \\
 (3500 \times 80) - 46000 &= 234000 \text{ cm}^3 \text{ (ans)}
 \end{aligned}$$

Ans: (b) 234 000 cm³

- 15 Karl had clips of four different colours. $\frac{1}{8}$ of the clips were white and $\frac{2}{7}$ of the remaining clips were red. He had an equal number of blue clips and yellow clips. Karl had 35 blue clips.

- (a) How many red clips did he have?

$$\begin{aligned}
 \text{Clips} &\begin{cases} \frac{1}{8} \text{ white} \\ \frac{7}{8} \text{ remaining} \end{cases} \\
 &\begin{cases} \frac{2}{7} \text{ red} \\ \frac{5}{7} (B + Y) \end{cases} \\
 \frac{5}{7} \text{ of remaining} &\rightarrow 35 + 35 \\
 &= 70 \\
 \frac{1}{7} \text{ of remaining} &\rightarrow 70 \div 5 \\
 &= 14 \\
 R \rightarrow \frac{2}{7} \text{ of remaining} &\rightarrow 14 \times 2 \\
 &= 28 \text{ (ans)}
 \end{aligned}$$

Ans: (a) 28

- (b) Karl packed all the blue clips into small, medium, and large boxes. He filled each small box with 2 clips, each medium box with 3 clips and each large box with 6 clips. All the boxes were full and there was no clip left over. What was the least number of boxes used by Karl?

$$\begin{aligned}
 ? \text{ small} \times 2 + ? \text{ medium} \times 3 + ? \text{ large} \times 6 &= 35 \\
 35 \div 6 &= 5 \text{ R } 5 \\
 (1 \times 2) + (1 \times 3) + (5 \times 6) &= 35 \\
 1 + 1 + 5 &= 7 \text{ (ans)}
 \end{aligned}$$

Ans: (b) 7

- 16 The figure below is made up of 16 identical semicircles and a rectangle. The diameter of each semicircle is 14 cm. (Take $\pi = \frac{22}{7}$)



- (a) Find the perimeter of the figure.

$$\begin{aligned}
 16 \text{ semicircles} &= 8 \text{ circles} \\
 \text{Perimeter} &= 8 \times \pi \times \frac{14}{2} \times 2 \\
 &= 352 \text{ cm}
 \end{aligned}$$

Ans: (a) 352 cm (3)

- (b) Find the area of the figure.

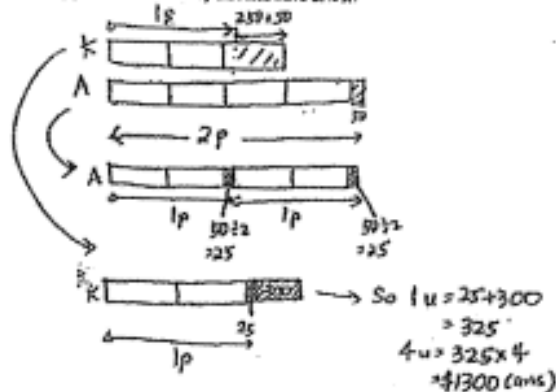
$$\begin{aligned}
 8 \times \pi r^2 + L \times B & \quad L = 14 \times 5 = 70 \\
 & \quad B = 14 \times 3 = 42 \\
 &= (8 \times \frac{22}{7} \times 7 \times 7) + (70 \times 42) \\
 &= 1232 + 2940 \\
 &= 4172 \text{ cm}^2 \text{ (ans)}
 \end{aligned}$$

Ans: (b) 4172 cm² (3)

13

- 17 The amount of money Kathy had to the amount of money Alice had was 3 : 4. After Kathy spent \$250 on a bag and gave \$50 to Alice, the ratio became 1 : 2.

- (a) How much money did Alice have at first?



Ans: (a) \$1300 (3)

- (b) How much money did Kathy have at the end?

$$\begin{aligned}
 1p &= 2u + 25 \\
 &= 2 \times 325 + 25 \\
 &= 650 + 25 \\
 &= 675 \text{ (ans)}
 \end{aligned}$$

Ans: (b) \$675 (3)

End of Paper

14

PAYAR LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

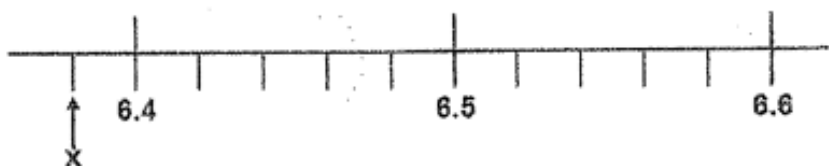
1. Which of the following is one hundred and four thousand and two in numerals?

- (1) 1 042 000
- (2) 104 002
- (3) 14 020
- (4) 10 042

2. Which of the following is the same as 3050 cm?

- (1) 0.305 m
- (2) 30.05 m
- (3) 30.5 m
- (4) 3.05 m

3. Part of a scale is shown below. What is the value of the reading at X?

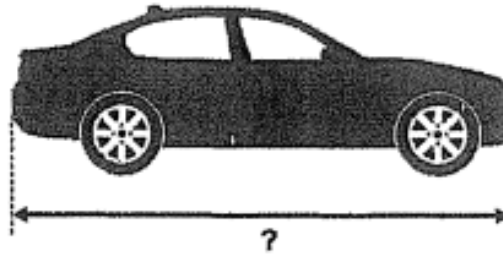


- (1) 6.39
- (2) 6.38
- (3) 6.34
- (4) 6.30

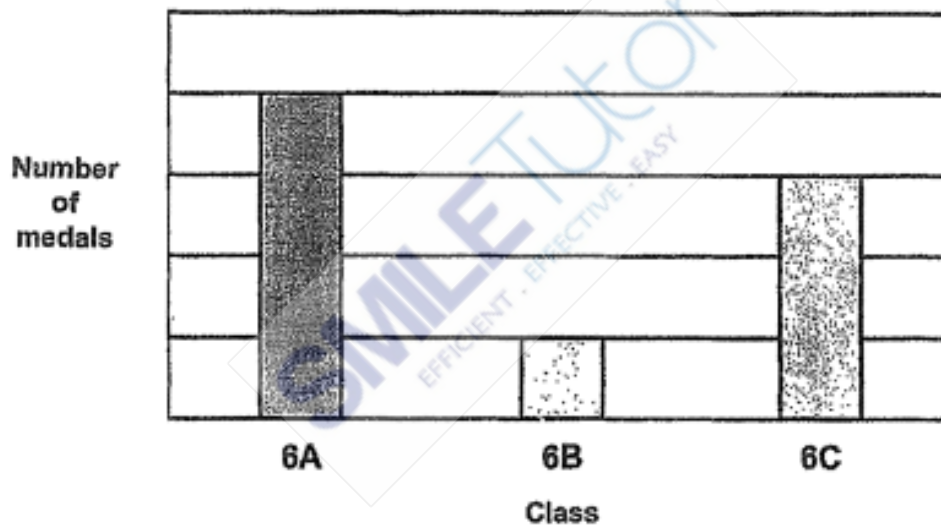


4. The diagram below shows a car.
Which of the following could be the length of the car?

- (1) 4.5 m
- (2) 4.5 km
- (3) 45 cm
- (4) 45 m



5. The bar graph below shows the number of medals won by 3 classes during a Sports Meet.

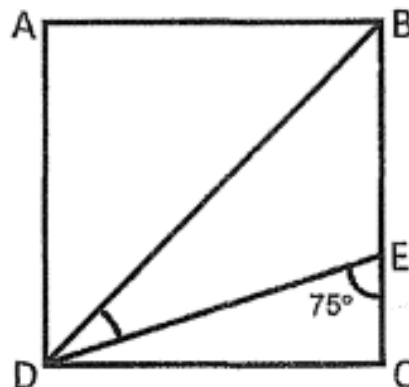


What percentage of the medals was won by Class 6B?

- (1) 12.5 %
- (2) 25 %
- (3) 35 %
- (4) 37.5 %

6. In the figure, ABCD is a square. DB and DE are straight lines. $\angle DEC = 75^\circ$. Find $\angle BDE$.

- (1) 15°
- (2) 20°
- (3) 30°
- (4) 45°



7. The shaded figure is a quarter circle of radius 7 cm. What is the perimeter of the shaded figure? Take $\pi = \frac{22}{7}$

- (1) 18 cm
- (2) 25 cm
- (3) 36 cm
- (4) 58 cm

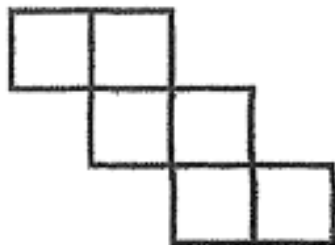


8. During a sale, a chair was sold at \$210. This was 30% less than the usual price of the chair. What was the usual price of the chair?

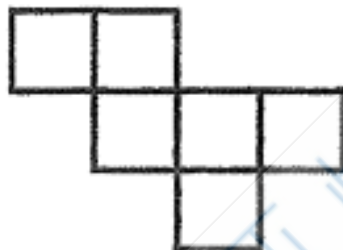
- (1) \$63
- (2) \$147
- (3) \$300
- (4) \$700

9. Which of the following is not the net of a cube?

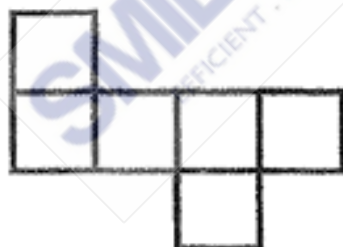
(1)



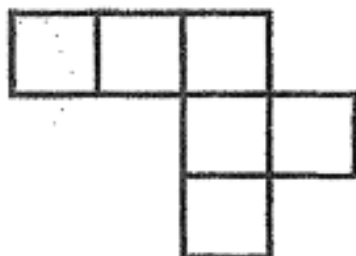
(2)



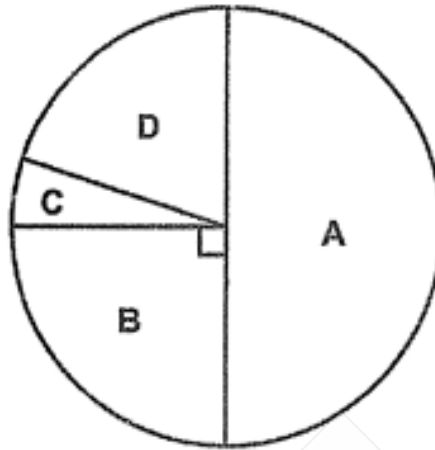
(3)



(4)

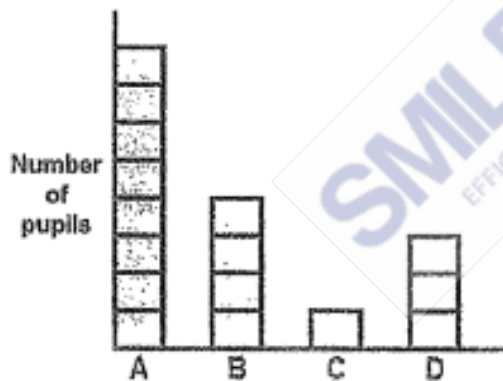


10. Some pupils were asked to choose one brand of pen from Brands A, B, C or D. The pie chart shows their choices. Half of the pupils chose Brand A.

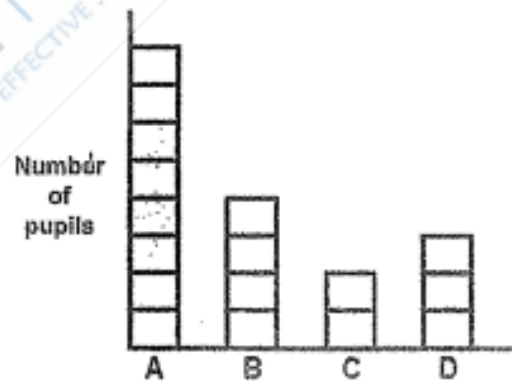


Which bar graph best represents the information in the pie chart above?

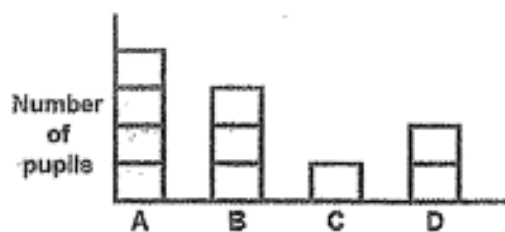
(1)



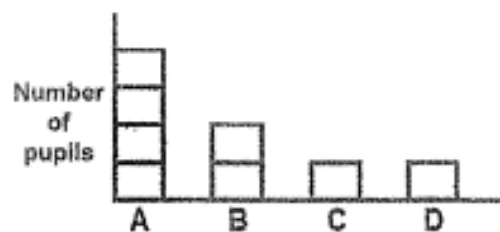
(2)



(3)



(4)



11. Mina has \$ p . She has half as much money as Siti. Linda has \$7 less than Siti. How much money does Linda have?

(1) $\$(2p - 7)$

(2) $\$(2p + 7)$

(3) $\$(\frac{p}{2} - 7)$

(4) $\$(\frac{p}{2} + 7)$

12. Participants of a quiz must obtain at least a certain score to win a prize. There were 90 participants and the table below shows the number of participants with the following scores.

Score	Number of Participants
20	4
22	10
24	13
25	27
28	9
29	20
30	7

$\frac{3}{10}$

30% of the participants won prizes. From the table, what was the highest score of a participant who did not win a prize?

(1) 29

(2) 28

(3) 25

(4) 24

13. Figure 1 shows a triangle with a perimeter of 25 cm. The shortest side of the triangle is 5 cm. Figure 2 is formed using 5 such triangles.



Figure 1

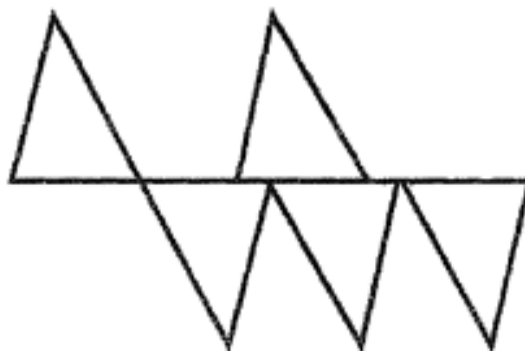


Figure 2

Find the perimeter of Figure 2.

- (1) 125 cm
- (2) 120 cm
- (3) 115 cm
- (4) 110 cm

14. John had $5x$ packets of game cards. Each packet contained 7 game cards. After giving away 1 packet of game cards, how many game cards had he left?

- (1) $28x$
- (2) $5x - 1$
- (3) $35x - 1$
- (4) $35x - 7$

15. A table with 4 columns is filled with numbers in a certain pattern. The first five rows of the table are shown below.

	Column A	Column B	Column C	Column D
Row 1	1		2	
Row 2		4		3
Row 3	5		6	
Row 4		8		7
Row 5	9		10	
⋮	⋮	⋮	⋮	⋮

In which column will the number 923 appear?

- (1) Column A
- (2) Column B
- (3) Column C
- (4) Column D

End of Booklet A

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided.
For questions which require units, give your answers in the units stated. (5 marks)

16. Find the value of $(24 - 9 \div 3) \times 5$

Ans: _____

17. Find the value of $\frac{2}{3} \div 8$

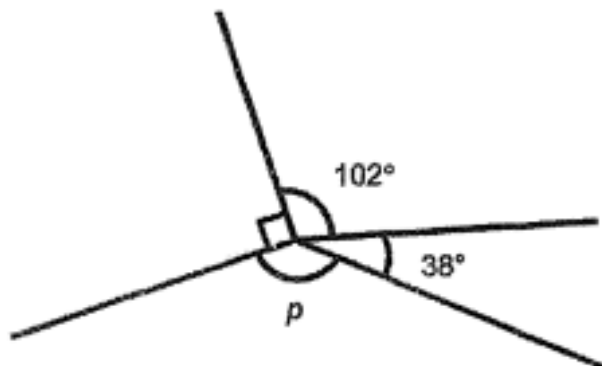
Give your answer as a fraction in the simplest form.

Ans: _____

18. Shawn left his home at 5.50 a.m. and travelled for $1\frac{1}{4}$ h to reach his school.
What time did Shawn reach his school?

Ans: _____ a.m.

19. Find $\angle p$ in the figure below.



Ans: _____°

20. In a school hall, the number of girls was 40% less than the number of boys. There were 408 children altogether. How many girls were there in the hall?

Ans: _____

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

21. Find the value of

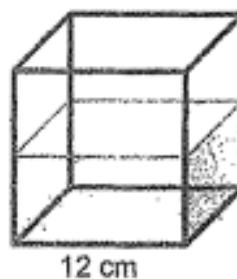
(a) $\frac{7}{8} \times \frac{2}{3}$

Ans: (a) _____

(b) $5m - 9 - m + 2m + 12$

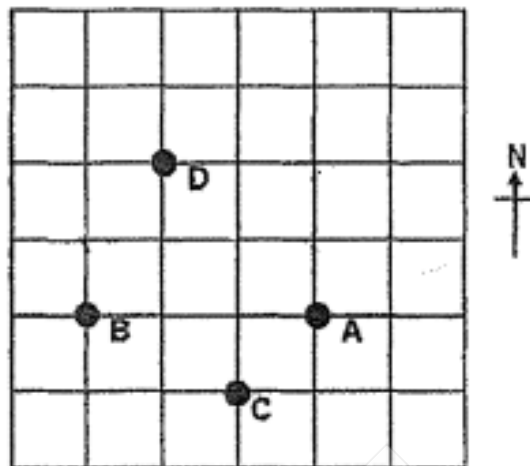
Ans: (b) _____

22. In the diagram below, the cubical tank is half filled with water. What is the volume of the water in the tank? Give your answer in litres.



Ans: _____ ℓ

23. The square grid shows the positions of points A, B, C and D.



- (a) Ravi walked directly from point A to point B in a straight line.
In which direction did Ravi walk?

Ans: (a) _____

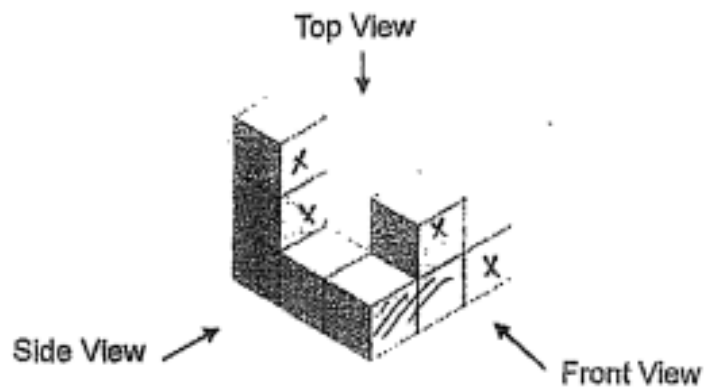
- (b) Jane was standing at a location south-east of point D and north of point C.
Mark Jane's position on the square grid with an X.

24. The figure below is made up of a semicircle and a quarter circle, both of radius 10 cm. Find the area of the shaded part. Take $\pi = 3.14$.

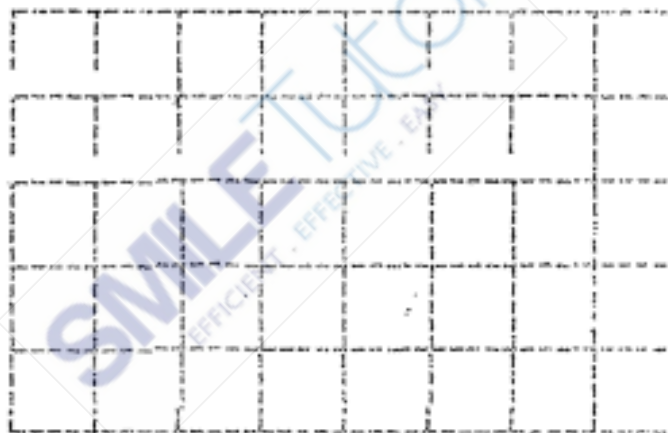


Ans: _____ cm²

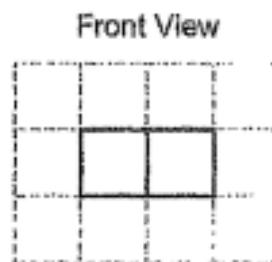
25. 8 identical cubes are stacked to form the following solid.



(a) Draw the top view of the solid in the square grid below.



(b) Find the **least** number of cubes that can be removed from the above solid such that the new solid has the following front view:



Ans: (b) _____

26. Norman's daily allowances for a particular week are shown in the table below.

Day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Amount (\$)	8	10	8	5	6	5	0

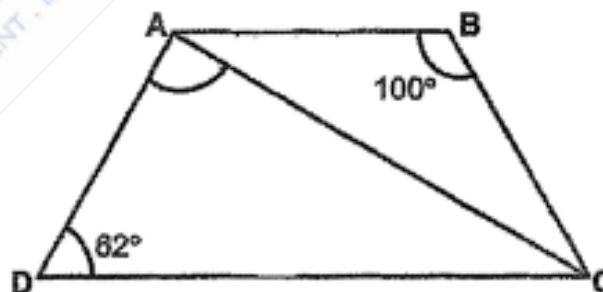
Find his average daily allowance for the week.

Ans: \$ _____

27. ABCD is a trapezium. AB is parallel to DC, $AB = BC$.

$\angle ABC = 100^\circ$ and $\angle ADC = 62^\circ$.

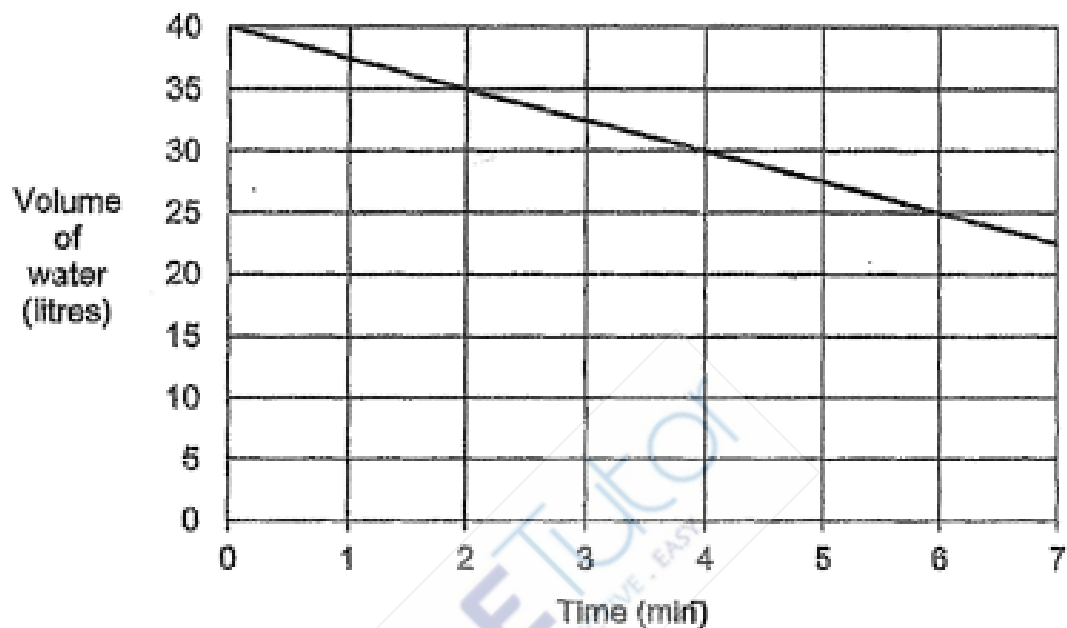
Find $\angle CAD$.



Ans: _____°

28. A tank, which was completely filled with water at first, started leaking. Water flowed out of the tank until it was completely emptied.

The line graph shows the volume of water in the tank during the first 7 minutes.

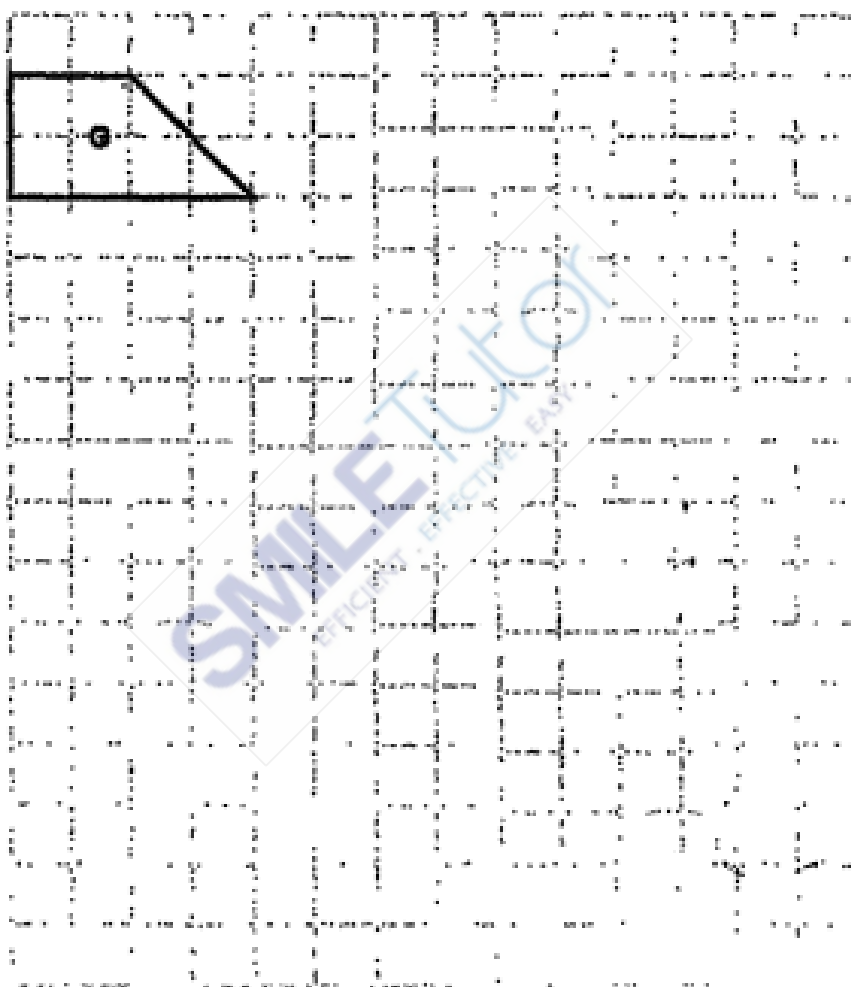


- At this rate, how long did it take to empty the tank?


Ans: _____ min

29. A trapezium **G** is drawn by joining dots on the square grid below with four straight lines. In the same way,

- (a) draw a rectangle with the same area as **G**. Label the rectangle **R**.
- (b) draw a parallelogram with the same perimeter as **G**. Label the parallelogram **P**.



30. A box contained red, blue, yellow and green beads. The table below provides information about the number of each type of beads. The number of red beads was covered by an ink blot.

Colour	Number of Beads
Red	
Blue	10 %
Yellow	$\frac{1}{5}$
Green	More than 30%

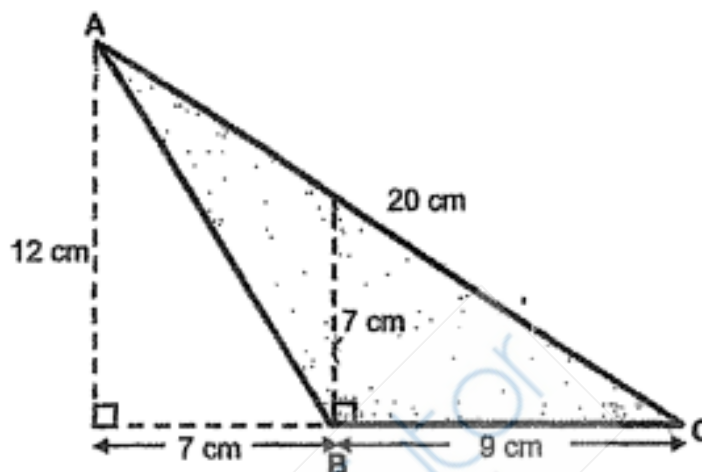
Each statement below is either true, false or not possible to tell from the information given above. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
There are 105 beads in the box altogether.			
40% of the beads are red.			
There are more red beads than green beads.			

End of Booklet B

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1. Find the area of Triangle ABC.

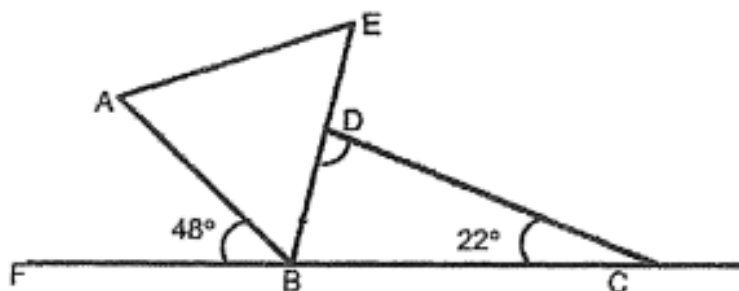


Ans: _____ cm²

2. The total cost of a handphone and a laptop is \$1185. The handphone costs $\frac{2}{3}$ as much as the laptop. What is the cost of the handphone?

Ans: \$ _____

3. AEB is an equilateral triangle and FBC is a straight line. Find $\angle BDC$.



Ans: _____°

4. The sum of three different 3-digit numbers is 375. The smallest number is 120. What is the biggest possible difference between the other two numbers?

Ans: _____

5. The table below shows how Aaron, Bernice and Charlotte shared the cost of a present for their mother. They paid a total of \$170 for the present.

Child	Amount (\$)
Aaron	$4m$
Bernice	$2m + 3$
Charlotte	$m - 1$

Find the value of m .

Ans: _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. Muthu cycled from point A to point B at 375 m/min. Then, he used the same amount of time to cycle from point B to point C. What was his average speed for the entire journey? Express your answer in m/min.

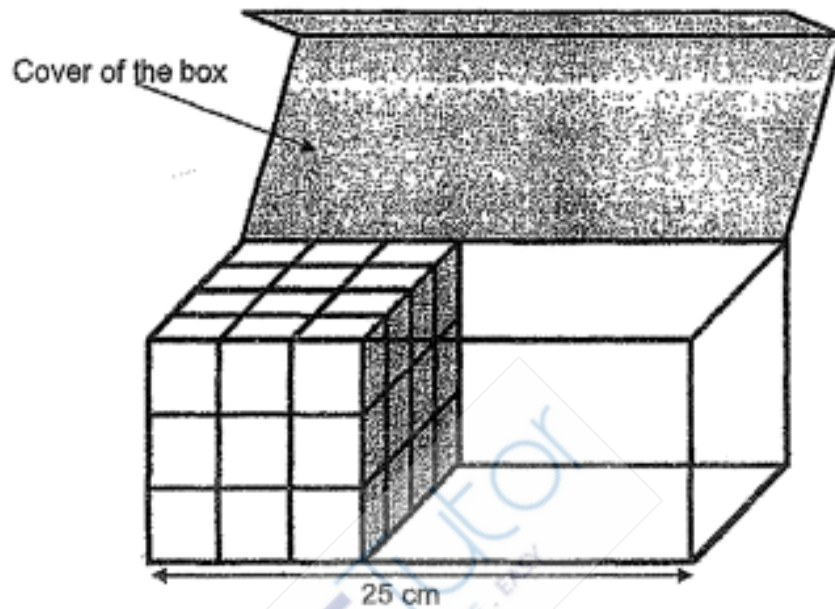


7. The participants of a run were divided equally into Group A and Group B. The ratio of the number of boys to the number of girls was 1 : 2 in Group A and 4 : 3 in Group B. A total of 345 girls took part in the run. How many more boys were there in Group B than in Group A?



Ans: _____ [3]

8. Amy packed some 3-cm cubes into a box shown below. She wanted to fill the remaining space with as many 2-cm cubes as possible and still be able to close the cover of the box. How many 2-cm cubes would she need?



Ans: _____ [3]

9. The actual average income of a group of adults was \$3150. When Ms Tan recorded the income of these adults, she wrongly keyed in one adult's income as \$2400 when it should have been \$4200. As a result, Ms Tan calculated the average income as \$3100. How many adults were there in the group?



Ans: _____ [3]

10. At first, Mr Ahmad had a total of 600 bowls and plates in his shop.
He sold $\frac{3}{5}$ of the bowls and 124 plates. After that, Mr Ahmad had thrice as many bowls as plates in his shop.

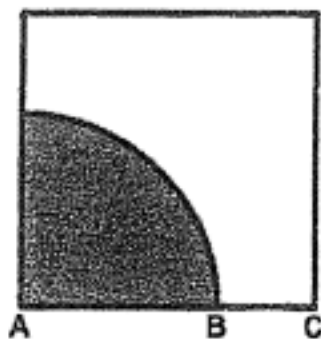
- (a) What was the ratio of the number of bowls sold to the number of bowls left in Mr Ahmad's shop? Express your answer in its simplest form.

Ans: (a) _____ [1]

- (b) How many plates and bowls did he sell altogether?

Ans: (b) _____ [3]

11. The figure is made up of a square and a quarter circle.
 The ratio of the length of AB to the length of AC is 2 : 3.



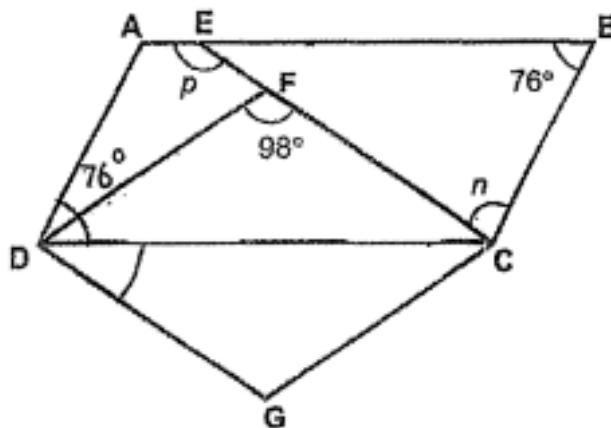
- (a) The perimeter of the shaded part is 16 cm shorter than the perimeter of the unshaded part. What is the length of AC?

Ans: (a) _____ [1]

- (b) What percentage of the square is shaded? Round your answer to 2 decimal places. Take $\pi \approx 3.14$

Ans: (b) _____ [3]

12. ABCD is a parallelogram and DFCG is a rhombus. EFC is a straight line.



(a) Find $\angle n$.

Ans: (a) _____ [2]

(b) Find $\angle p$.

Ans: (b) _____ [1]

(c) Circle the word that describes triangle BCE.

Triangle BCE (is / is not) an Isosceles triangle.

[1]

13. Sue had $\frac{2}{3}$ as many stickers as Peggy. Esther had 12 more stickers than Sue. After Peggy gave 40 stickers to Sue and some stickers to Esther, all three girls had the same number of stickers.

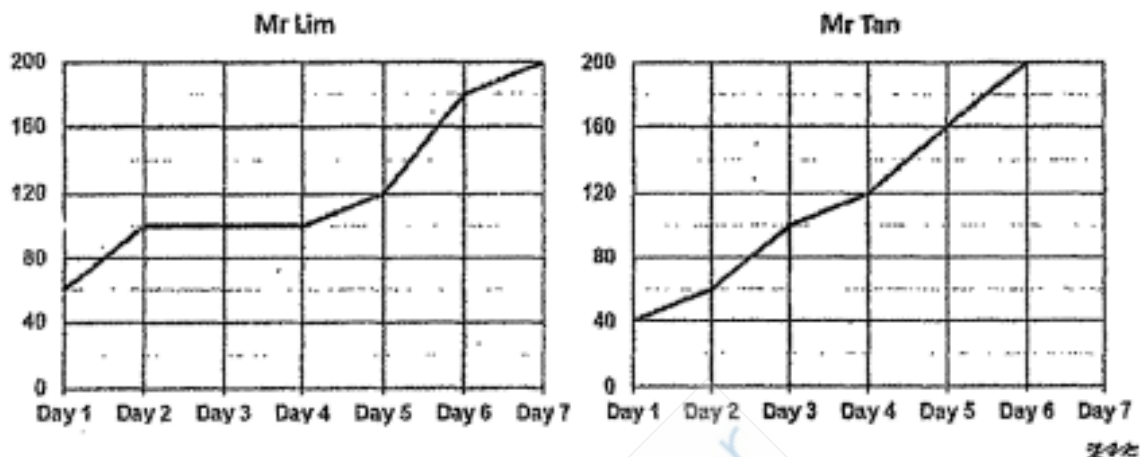
(a) How many stickers did Peggy give to Esther?

Ans: (a) _____ [1]

(b) How many stickers did the three girls have altogether?

Ans: (b) _____ [3]

14. Mr Lim and Mr Tan each had 200 identical pots to sell. Both started selling the pots on the same day. The line graphs show the total number of pots sold by them by the end of each day.



- (a) Who took fewer days to sell half of his pots?

Ans: (a) _____ [1]

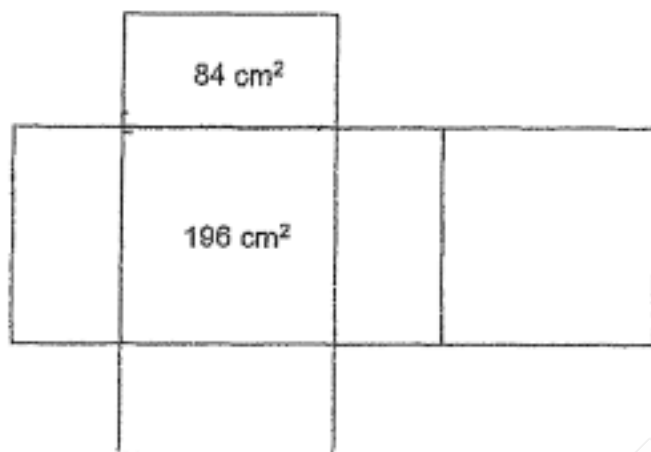
- (b) How many pots did Mr Lim sell on Day 6?

Ans: (b) _____ [1]

- (c) The original price of each pot was \$70. On the day when Mr Tan had sold 80% of his pots, Mr Lim decided to offer a 15% discount for his remaining pots. How much did Mr Lim collect from the sale of these remaining pots?

Ans: (c) _____ [2]

15. The figure below shows the net of a solid with a square base. The area of one of its rectangular faces is 84 cm^2 and the area of one of its square faces is 196 cm^2 .



- (a) Name the solid.

Ans: (a) _____ [1]

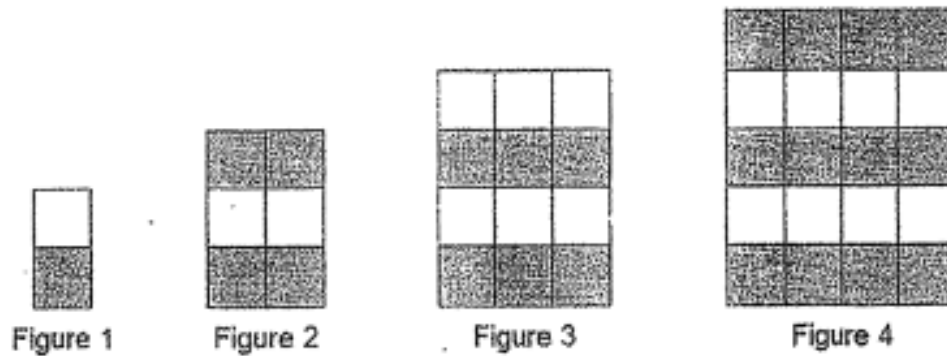
- (b) Find the volume of the solid.

Ans: (b) _____ [2]

- (c) John took 5 of the above solid and stacked them one on top of another. What was the greatest possible height of the new solid formed?

Ans: (c) _____ [1]

16. The first four figures of a pattern are shown below.



The table below shows the number of squares used for each figure.

Figure Number	Number of grey squares	Number of white squares	Total number of squares
1	1	1	2
2	4	2	6
3	6	6	12
4	12	8	20
5	(a) _____	(a) _____	30

[1]

(a) Fill in the numbers for Figure 5.

(b) How many white squares are there in Figure 15?

Ans: (b) _____ [2]

Continue Q16 on the next page.

(c) How many grey squares are there in Figure 80?



Ans: (c) _____ [2]

17. Lily and Megan had an equal number of coins.

Lily had equal number of fifty-cent coins and twenty-cent coins. $\frac{1}{4}$ of Megan's coins were fifty-cent coins and the rest of her coins were twenty-cent coins.

Lily had \$13.50 more than Megan.

(a) How many coins did each girl have?

Ans: (a) _____ [2]

(b) Megan decided to exchange all her twenty-cent coins for fifty-cent coins of the same value. What was the percentage increase in her number of fifty-cent coins?

Ans: (b) _____ [2]

End of Paper 2

Answer Sheet


PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	2	1	1	3	2	3	4	1

Q 11	Q12	Q13	Q14	Q15
1	2	3	4	4

PAPER 1 BOOKLET B

Q16)	$(24 - 9 \div 3) \times 5 = (24 - 3) \times 5 = 21 \times 5 = 105$
Q17)	$2/3 \div 8 = 2/3 \times 1/8 = 1/12$
Q18)	7.05 am
Q19)	Angle P = $360^\circ - (90^\circ + 102^\circ + 38^\circ) = 130^\circ$
Q20)	$408 \div 16 = 25.5$ Number of girls = $25.5 \times 6 = 153$
Q21)	a) $7/8 - 2/3 = 21/24 - 16/24 = 5/24$ b) $5m - 9 - m + 2m + 12 = 6m + 3$
Q22)	$12 \times 12 \times 6 = 864 \text{ cm}^3$ $864 \text{ cm}^3 = 0.864 \text{ L}$
Q23)	a) North-west b) X lies one right, one unit down of D
Q24)	Shaded area = $10 \times 10 \times \frac{1}{2} \times 3.14 = 157 \text{ cm}^2$
Q25)	a) <div style="text-align: center;">S S SSSSSS</div> b) 4
Q26)	Average = $(8 + 10 + 8 + 5 + 6 + 5 + 0) \div 7 = 42 \div 7 = 6$
Q27)	Angle BAC = $(180 - 100) \div 2 = 40$ Angle DAB = $180 - 62 = 118$

Angle CAD = $118 - 40 = 78$	
Q28)	Every 2 mins, 5 litres of water flows out of the tank $40 \% 5 = 8$ $8 \times 2 = 16$ minutes
Q29)	
Q30)	a) False b) False c) Not possible to tell

PAPER 2

Q1)	Area of ABC = $\frac{1}{2} \times 12 \times 9 = 54 \text{ cm}^2$														
Q2)	$\$1185 \div 5 = \237 $\$237 \times 2 = \474														
Q3)	$48^\circ + 60^\circ = 108^\circ$ $108^\circ - 22^\circ = 86^\circ$														
Q4)	$875 - 120 = 255$ $255 - 121 = 134$ $134 - 121 = 13$														
Q5)	$170 = 4m + m - 1 + 2m + 3$ $= 7m + 2$ $7m = 168$ $M = 24$														
Q6)	$4.5 \text{ km} \div 375 = 12 \text{ min}$ $3 \text{ km} \div 12 = 250 \text{ m/min}$ Average speed = $(250 + 375) / 2 = 312.5 \text{ m/min}$														
Q7)	<table border="0"> <tr> <td>A</td> <td>B</td> </tr> <tr> <td>G:B</td> <td>G:B</td> </tr> <tr> <td>2:1</td> <td>3:4</td> </tr> <tr> <td>14:7</td> <td>9:12</td> </tr> <tr> <td colspan="2">$345 = (14+9)u = 23u$</td> </tr> <tr> <td colspan="2">$U = 15$</td> </tr> <tr> <td colspan="2">$5u = 75$</td> </tr> </table>	A	B	G:B	G:B	2:1	3:4	14:7	9:12	$345 = (14+9)u = 23u$		$U = 15$		$5u = 75$	
A	B														
G:B	G:B														
2:1	3:4														
14:7	9:12														
$345 = (14+9)u = 23u$															
$U = 15$															
$5u = 75$															
Q8)	$25 - 9 = 16$ $16/2 = 8$ $12/2 = 6$														

	$\frac{9}{2} = 4 R 1$ $8 \times 6 \times 4 = 192$
Q9)	$4200 - 2400 = 1800$ $3150 - 3100 = 50$ $1800 \div 50 = 36$
Q10)	a) $5x + (U + 124) = 600$ $2x + u = 476 - 3x$ $3u + u = 476 - 4.5u$ $8.5u = 476$ $U = 56$ $3x = 4.5u = 252$ $252 : 168$ $3 : 2$ b) $252 + 124 = 376$
Q11)	a) $16 = (6u + 2u) - 4u$ $= 4u$ $U = 4$ $AC = 3u = 12 \text{ cm}$ b) Shaded area = $\frac{1}{4} \times 8 \times 8 \times 3.14 = 50.24$ Square = $12 \times 12 = 144$ Percentage shaded = $50.24 / 144 \times 100\% = 34.9\%$
Q12)	A) $(180 - 98) / 2 = 41$ Angle n = $(180 - 76) - 41 = 63$ b) angle p = $76 + 63 = 139$ c) is not
Q13)	a) $40 - 12 = 28$ b) $1u = 40 + 28 + 40 = 108$ $7u = 108 \times 7 = 756$ $756 + 12 = 768$
Q14)	a) Mr Lim b) $180 - 120 = 60$ c) $80 / 100 \times 200 = 160$ $200 - 120 = 80$ $85\% \times 70 = 59.50$ $59.50 \times 86 = \$4760$
Q15)	a) Cuboid b) $14 \times 14 \times 6 = 1176 \text{ cm}^3$ c) $14 \times 5 = 70 \text{ cm}$
Q16)	a) 20, 15

Q8)	$b = \frac{1}{2} \text{ of area of } x$ $\text{area of } x = 5 \times 2 = 10$ $\text{area of } c = 5 - 1 = 4$ <ul style="list-style-type: none"> - Not possible to tell - False - True
Q9)	$\frac{1}{4} \times \frac{22}{7} \times 14 = 11\text{cm}$ $11 + 7 = 18\text{cm}$ $125 - 11 = 114$ $114 - 21 - 21 = 72\text{cm}$ $\frac{72}{2} = 36\text{cm}$
Q10)	$\frac{1}{2} \times \frac{3}{14} \times 8 \times 8 = 110.48\text{cm}^2$ $(16 \times 16) \times 2 = 512\text{cm}^2$ $16 \times 8 = 128\text{cm}^2$ $\text{total} = 128 + 100.48 + 100.48 + 512 = 840.96\text{cm}^2$
Q11)	<p>(a) $10u = \\$2000$</p> $3u = \$600$ <p>(b) $\text{March transport} = \frac{10}{100} \times 2000 = \\200</p> $\text{shopping} = \frac{60}{100} \times 2000 = \1200 $\text{food} = \$2000 - \$1200 - \$200 = \600 $\text{April transport} = \200 $\text{shopping} = \frac{90}{100} \times \$1200 = \$1080$ $80\% = \$1080 + \$200 = \$1280$ $100\% = \$16 \times 100 = \1600
Q12)	<p>(a) $60 \div 5 = 15$</p> $15 \times 2 = 30\text{cm}$ <p>(b) $23 \div 2 = 11.5$</p> $4 \div 2 = 2$ $5 \div 2 = 2.5$ $11 \times 2 \times 2 = 44$
Q13)	<p>(a) AOB</p> <p>(b) $OBA = (180 - 90) \div 2 = 45$</p> $OBC = 58$ $ABC = 58 - 45 = 13$ <p>(C) $BOC = 180 - 58 - 58 = 64$</p> $AOC = 90 - 64 = 26$

Q14)

$$\text{choco left} = \frac{1}{6} \text{ of } \frac{3}{4} = \frac{1}{8}$$

$$\text{butter left} = \frac{1}{5} - \frac{1}{8} = \frac{3}{40}$$

$$\text{butter sold} = \frac{1}{4} - \frac{3}{40} = \frac{7}{40}$$

$$\frac{7}{40} = 105$$

$$\frac{1}{40} = 15$$

$$\frac{40}{40} = 600$$

Q15) (a) $m:w = 23:5$

$$23u = 46$$

$$1u = 46 \div 23 = 2$$

$$8u = 16$$

(b) $\frac{1}{3} \text{ of } M = 16$

$$\text{men} = 16 \times 3 = 48$$

$$4u = 48$$

$$3u = 36$$

Q16) (a) jerry had 6 more kaya buns $= 6 \times 50\text{cents} = 300\text{cents}$

$$\text{total diff} = 300\text{cents} + 90\text{cents} = 390\text{cents}$$

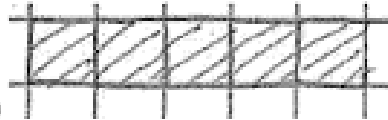
$$\text{per diff} = 80\text{cents} - 50\text{cents} = 30\text{cents}$$

$$\text{no. of buns} = 390\text{cents} \div 30\text{cents} = 13$$

(b) jerry $= 13 + 6 = 19$

$$\text{cost} = 19 \times 50\text{cents} = \$9.50$$

Q17) (a) $P = 3 \times 4 = 12\text{cm}$



(b)

(c) largest area $= 7 \times 8 = 56\text{cm}^2$

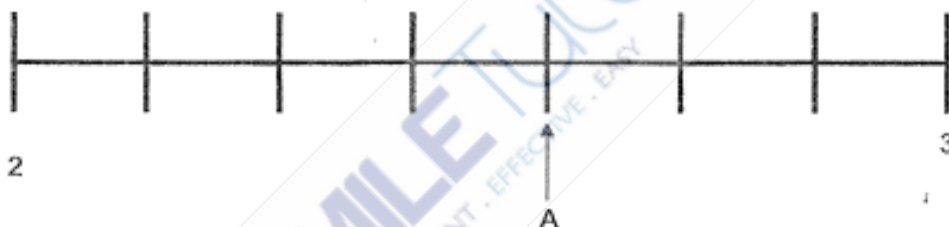
RAFFLES GIRLS' PRIMARY SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4). Shade your answer (1, 2, 3 or 4) on the OAS provided.
 All diagrams are not drawn to scale.

1. $2\ 090\ 304 = 2\ 000\ 000 + \underline{\hspace{2cm}} + 4$

- (1) 903
- (2) 9030
- (3) 90 300
- (4) 903 000

2. In the number line, what is the value represented by A?



- (1) $2\frac{1}{2}$
- (2) $2\frac{3}{8}$
- (3) $2\frac{4}{7}$
- (4) $2\frac{5}{8}$

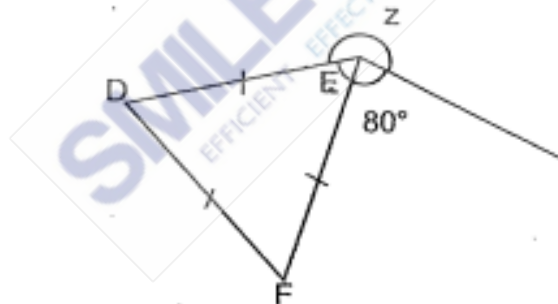
3. What is the value of the digit 5 in 78.254?

- (1) 5
- (2) 0.5
- (3) 0.05
- (4) 0.005

4. The area of the shaded face of the cuboid is 27 cm^2 . Its length is 9 cm . Find the volume of the cuboid.

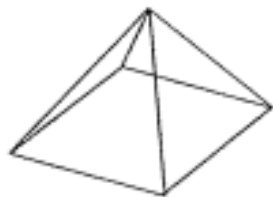


- (1) 3 cm^3
 - (2) 81 cm^3
 - (3) 243 cm^3
 - (4) 729 cm^3
5. In the figure, DEF is an equilateral triangle. Find $\angle z$.



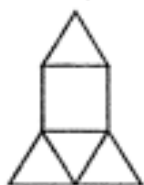
- (1) 280°
- (2) 220°
- (3) 140°
- (4) 100°

6. The figure shows a pyramid.



Which of the following is the net of the pyramid?

(A)



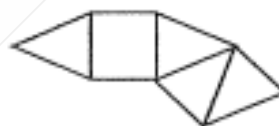
(B)



(C)



(D)



(1)

A

(2)

B

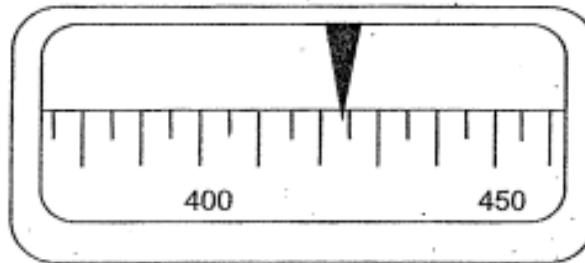
(3)

C

(4)

D

7. The figure shows part of a scale.
Which of the following is closest to the reading shown?



- (1) 405
(2) 410
(3) 425
(4) 430
8. At a concert, $\frac{4}{9}$ of the audience were children and the rest were adults. The number of men was $\frac{1}{2}$ of the number of children. What was the ratio of the number of women to the number of men?
- (1) 2 : 3
(2) 2 : 7
(3) 3 : 2
(4) 7 : 2
9. Minah makes a chain using 12 red beads and 48 blue beads. What percentage of the beads on the chain are red?

- (1) 80%
(2) 75%
(3) 25%
(4) 20%

10. What is the value of $\frac{5y}{2} - y$ when $y = 8$?

- (1) 28
- (2) 20
- (3) 16
- (4) 12

11. Tasty Bakery had an anniversary promotion for their fruit tarts. Mrs Kong bought 72 tarts. What was the least amount of money she had to pay for the tarts?

Tasty Bakery Anniversary Promotion

1 tart for \$3

10 tarts for \$28

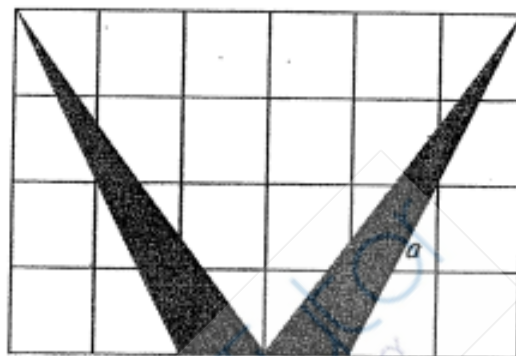


- (1) \$196
- (2) \$198
- (3) \$202
- (4) \$216

12. Elyse had a mixture of 10-cents, 20-cents, 50-cents and 1-dollar coins in a bag. She picked up 5 coins from the bag and used two of them. Which of the following is not a possible value of the remaining 3 coins?

- (1) \$1.20
- (2) \$1.80
- (3) \$2.20
- (4) \$2.50

13. Mrs Chan bought a mattress at a 20% discount. She paid \$3200 after the discount. What was the price of the mattress before the discount?
- (1) \$4000
 (2) \$2560
 (3) \$800
 (4) \$640
14. What fraction of the figure is shaded?



- (1) $\frac{1}{2}$
 (2) $\frac{1}{6}$
 (3) $\frac{1}{3}$
 (4) $\frac{2}{5}$
15. At a fruit stall, mangoes and pears were placed in Box A and Box B. In Box A, the ratio of the number of mangoes to the number of pears was 3 : 4. In Box B, the ratio of the number of mangoes to the number of pears was 3 : 5. There were 4 times as many fruits in Box B as in Box A. What was the ratio of the number of pears in Box A to the number of pears in Box B?
- (1) 1 : 5
 (2) 2 : 7
 (3) 4 : 5
 (4) 8 : 35

End of Paper
 ☺ Please check your work carefully ☺

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. Answers in fractions or ratio must be expressed in the simplest form.

16. Find the value of $7 \times (54 - 24 \div 6) + 4$.

Ans: _____

17. A charity concert starts at 7.45 p.m. There is a break of 10 minutes. The concert is 1 h 45 min long excluding the break. At what time does the concert end? Give your answer in 24-hour clock.

Ans: _____

18. Express $\frac{56}{6}$ as a mixed number in the simplest form.

Ans: _____

19. Find the value of $9.03 - 0.38$.

Ans: _____

20. The average mass of Mr Lim and his 2 children, Andy and Benny, is 44 kg. The total mass of Andy and Benny is the same as Mr Lim's mass. What is Mr Lim's mass?

Ans: _____ kg

Questions 21 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the space provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. Answers in fractions or ratio must be expressed in the simplest form.

21. a) Find the value of $\frac{3}{4} + \frac{1}{5}$

b) Find the value of $\frac{4}{5} + 12$

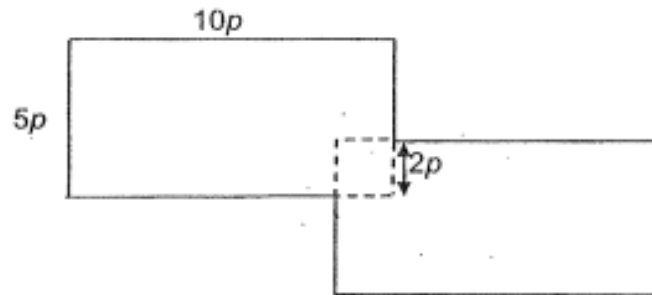
Ans: a) _____

b) _____

22. Fiona bought 350 m of ribbon to make some bow ties. She used up all the ribbon to make 200 large bow ties and 100 small bow ties. She needed 1.34 m of ribbon to make one large bow tie. What was the length of ribbon needed to make one small bow tie?

Ans: _____ m

23. The figure is made up of two identical overlapping rectangles. The overlapping part forms a square of side $2p$ cm. Find the perimeter of the figure in terms of p .

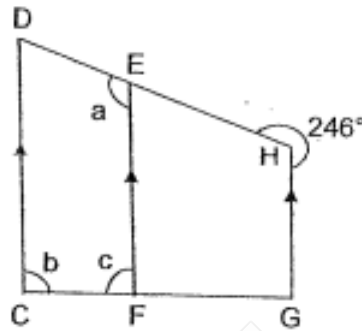


Ans: _____ cm

24. Gupta walked from his home to school which was 2.4 km away. He walked at an average speed of 80 m/min. How many minutes did he take to reach school?

Ans: _____

25. In the figure below, CD is parallel to FE and FE is parallel to GH . Find the sum of $\angle a$, $\angle b$ and $\angle c$.



Ans: _____°

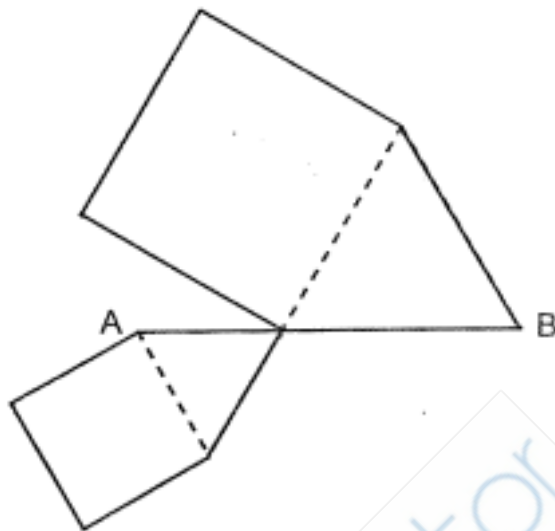
26. The table shows charges for bicycle rental.

BICYCLE FOR RENTAL	
For the first hour	\$2
For every additional $\frac{1}{2}$ hour	\$0.80

Kaitlyn rented a bicycle from 9.00 a.m. to 10.45 a.m. How much did she pay?

Ans: \$ _____

27. The figure is formed using 2 squares and 2 equilateral triangles. The length of the straight line AB is 25 cm. Find the perimeter of the figure.



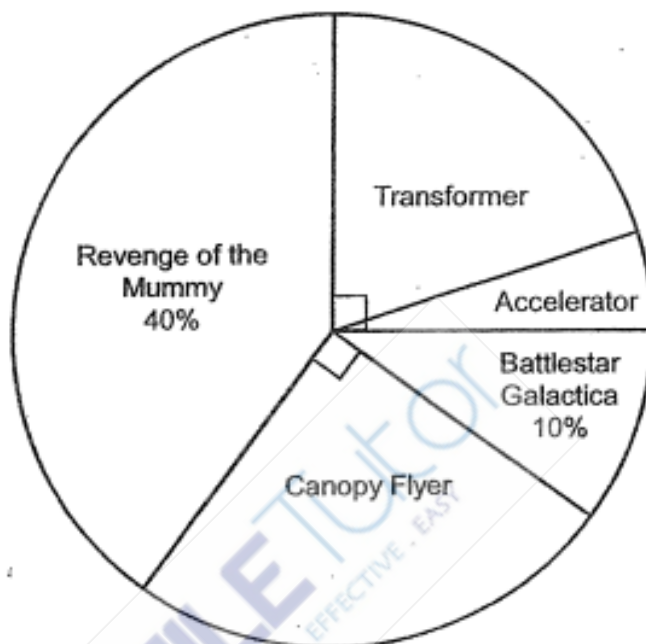
Ans: _____ cm

28. Yan and Lynn had some stickers. After Yan gave 34 stickers to Lynn, she had 60 stickers more than Lynn. How many more stickers than Lynn did Yan have at first?



Ans: _____

29. The pie chart shows the survey results of the favourite rides of a group of children who went to Universal Studios. 240 pupils enjoyed the Revenge of the Mummy ride.



The ratio of the number of pupils who enjoyed the Transformer ride to the number of pupils who enjoyed the Accelerator ride was 4 : 1. How many pupils enjoyed the Accelerator ride?

Ans: _____

30. Mr Min used $\frac{4}{7}$ of his money to buy 6 apples and 9 oranges. The cost of 3 apples was the same as that of 2 oranges. With the money he had left, what was the most number of oranges Mr Min could buy?

Ans: _____

End of Paper
☺ Please check your work carefully ☺

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. Figures are not drawn to scale.

For questions which require units, give your answers in the units stated.

Answers in fractions or ratio must be expressed in the simplest form. (10 marks)

1. A carton of eggs cost \$2.40 last year. This year, the same carton of eggs costs \$3. What is the percentage increase in the price of a carton of eggs?

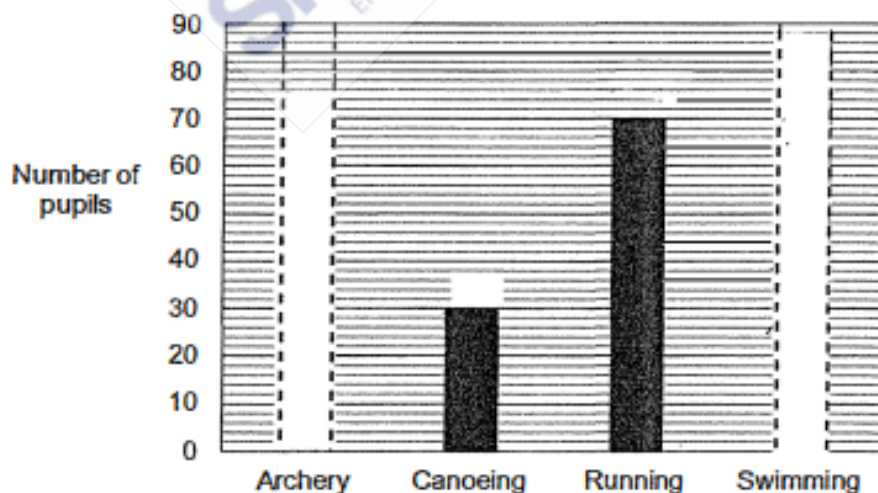


Ans : _____ % [2]

2. A group of pupils were asked to choose one activity from canoeing, running, swimming and archery. The pie chart shows the pupils' choices. $\frac{1}{2}$ of the number of pupils preferred swimming and archery.



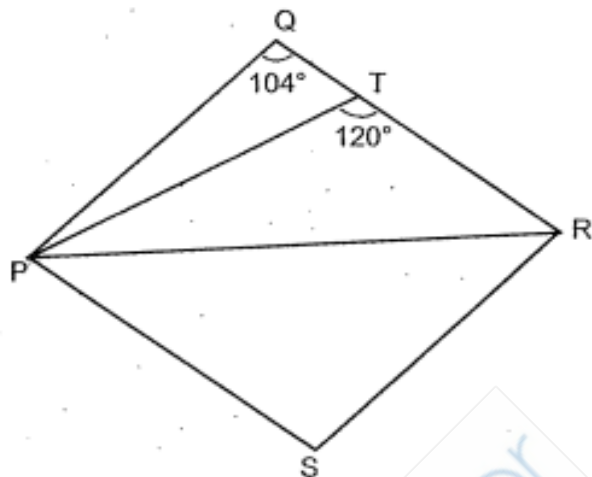
- a) What percentage of the pupils preferred running?
 b) The pupils' choices were also represented by a bar graph. The bars for archery and swimming were not drawn.
 How many pupils preferred running and archery?



Ans : (a) _____ [1]

(b) _____ [1]

3. PQRS is a rhombus. PR and PT are straight lines. $\angle PQR = 104^\circ$ and $\angle PTR = 120^\circ$. Find $\angle TPR$.



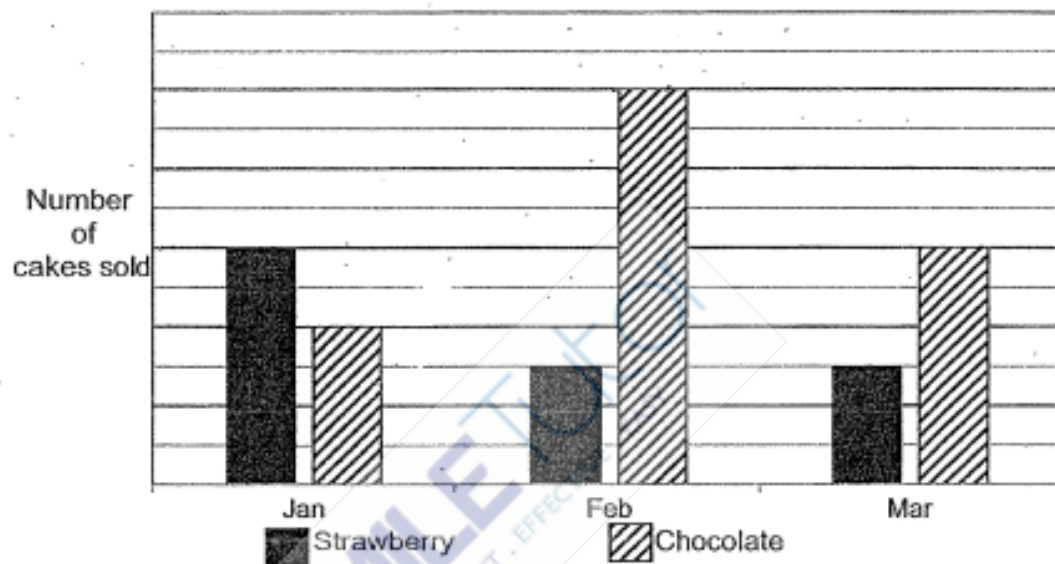
Ans : _____ $^\circ$ [2]

4. At a dinner party, the ratio of the number of men to the number of women was 5 : 4. Another 56 women joined them after the dinner had started. The ratio of the number of men to the number of women became 3 : 4. How many people were at the dinner party in the end?

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Ans : _____ [2]

5. Auntie Wendy sells strawberry and chocolate cakes in the canteen. The bar graphs show the number of strawberry and chocolate cakes sold from January to March. The difference in the number of strawberry and chocolate cakes sold in January is 4y.



Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick(✓) to indicate your answer. [2]

Statement	True	False	Not possible to tell
(a) The total number of cakes sold from January to March is 64y.			
(b) The average number of chocolate cakes sold in February and March is 5y more than the average number of strawberry cakes sold in February and March.			
(c) The number of cakes sold in February is 16 more than the number of cakes sold in March.			

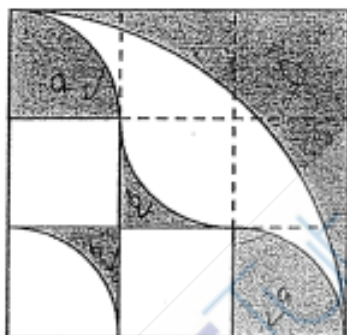
For questions 6 to 17, show your working clearly in the space provided for each question and write your answers in the spaces provided.

The number of marks available is shown in the brackets [] at the end of each question or part-question.

Figures are not drawn to scale.

Answers in fractions or ratio must be expressed in the simplest form. (45 marks)

6. The shaded figure is made up of 4 small quarter circles and 1 big quarter circle on 9 identical squares. The area of each square is 49 cm^2 . Find the area of the shaded part. Take $\pi = \frac{22}{7}$.

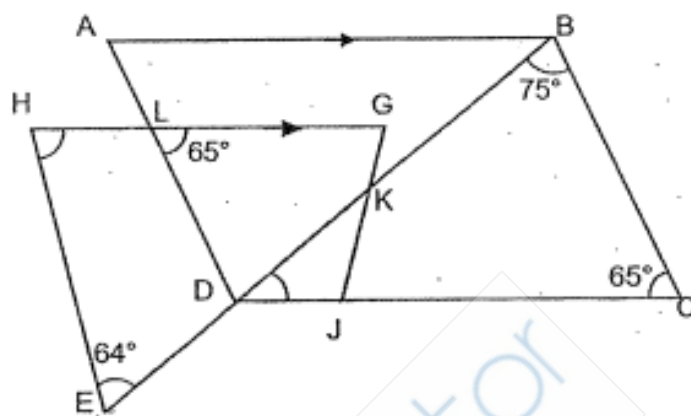


Ans : _____ [3]

7. ABCD is a parallelogram and LGJD is a trapezium. EB is a straight line, AB is parallel to HG, $\angle DBC = 75^\circ$, $\angle GLD = 65^\circ$, $\angle HEK = 64^\circ$ and $\angle BCD = 65^\circ$.

(a) Find $\angle KDJ$.

(b) Find $\angle EHG$.



Ans: (a) _____ [1]

(b) _____ [2]

9. Jennie bought some pens at \$1.80 each. Mary bought some notebooks at \$2.50 each. Jennie bought 9 more items than Mary and spent \$5 more than she did. How many notebooks did Mary buy?



Ans : _____ [3]

10. The table shows the number of children visiting the Science Centre from June to September.

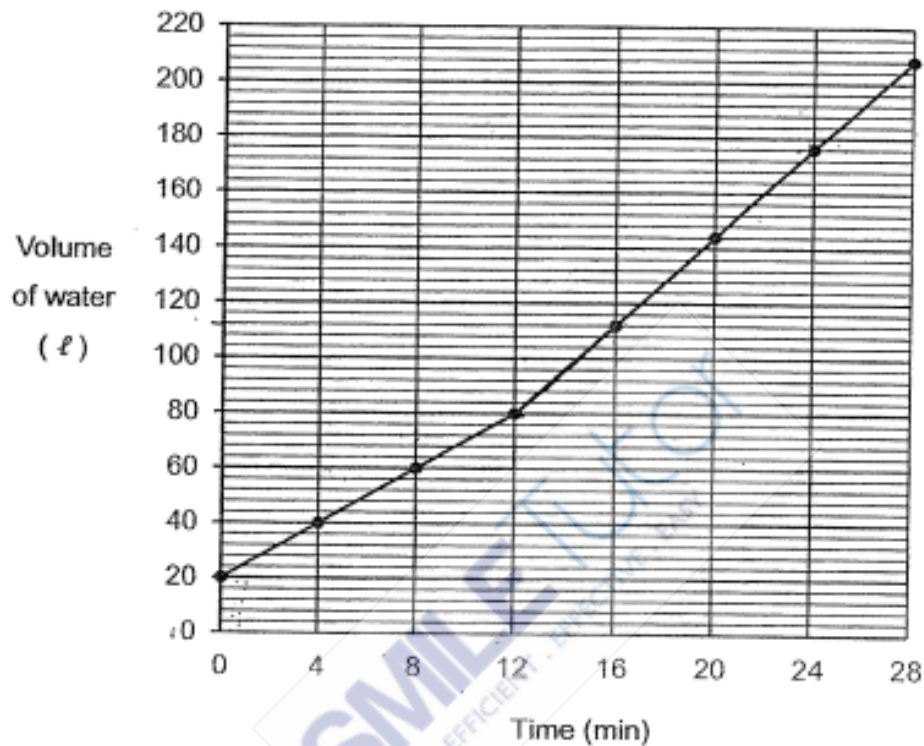
Month	Boys	Girls
June	235	121
July	123	81
August	111	89
September	140	?

- (a) The number of children visiting Science Centre in August and September is 75% of the number of children visiting in June and July. How many girls visited the Science Centre in September?
- (b) From September to October, there was a 20% increase in the number of boys. Find the number of boys at the Science Centre in October.

Ans: (a) _____ [2]

(b) _____ [1]

11. A tank was $\frac{1}{15}$ filled with water. After Tap A was turned on for 12 min, Tap B was also turned on. After another 16 min, both Tap A & Tap B were turned off at the same time. The line graph shows the volume of water in the tank over 28 min.



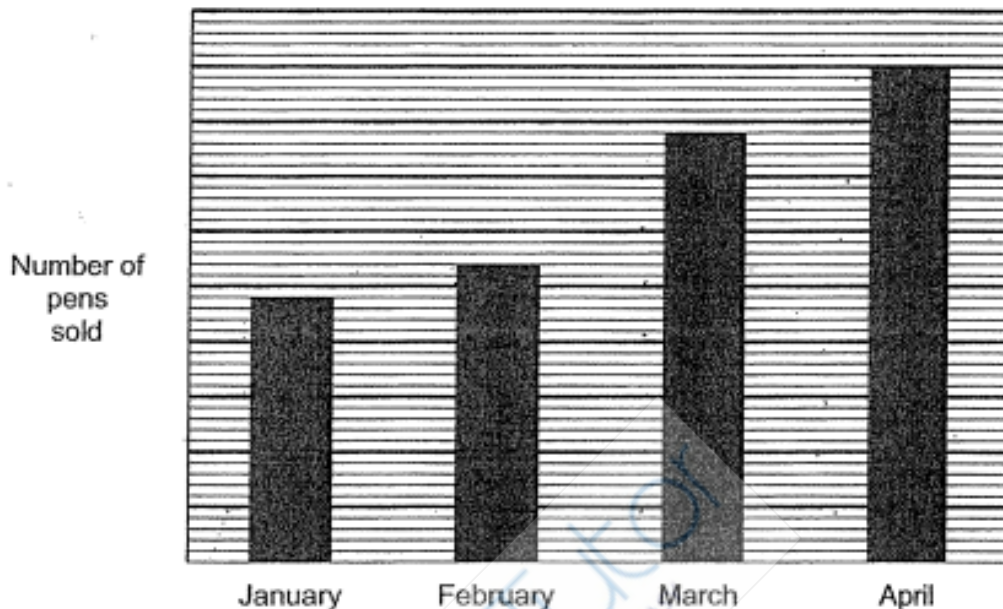
- What was the volume of the tank?
- How many litres of water flowed from Tap A in 12 minutes?
- In one minute, how many litres of water flowed from Tap B?

Ans: (a) _____ [1]

(b) _____ [1]

(c) _____ [2]

12. The bar graph shows the number of pens sold from January to April.
 The number of pens sold is not shown on the scale.

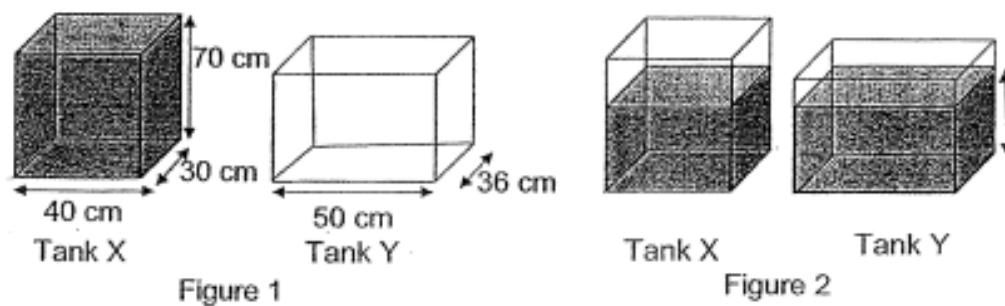


- a) Mr Yoong sold a total of 540 pens. How many pens were sold in March?
- b) In April, Mr Yoong reduced the price of pens by 20%. The original price of each pen was \$2.00. What was the total amount of money collected from the pens sold in April?

Ans: (a) _____ [2]

(b) _____ [2]

13. Figure 1 shows Tank X, which is completely filled with water, and Tank Y, which is empty. Water is poured from Tank X into Tank Y without spilling. The heights of the water level in the two tanks are now equal as shown in Figure 2.

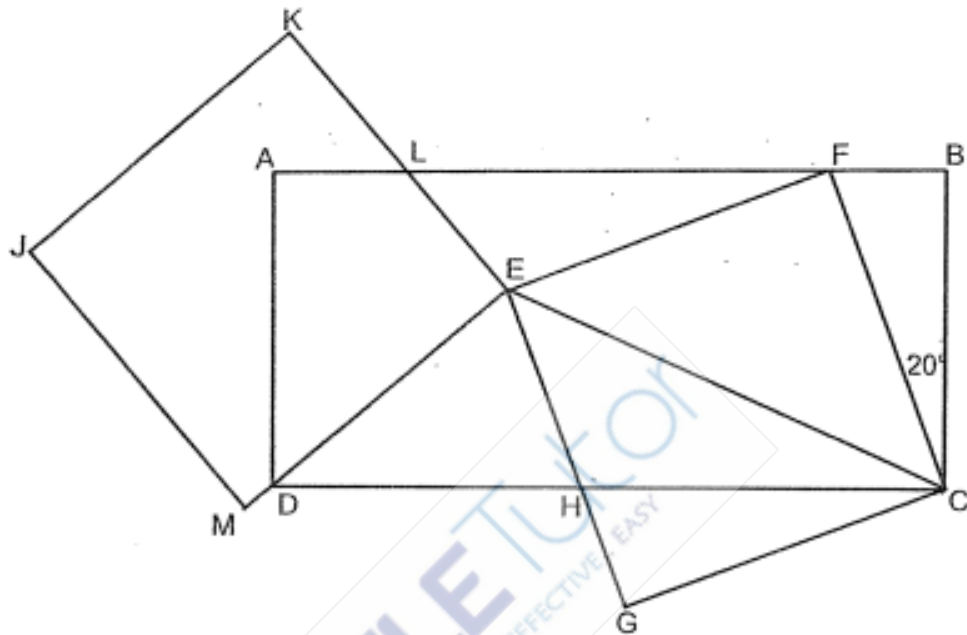


- What is the capacity of Tank X?
- What is the height of the water in Tank Y in Figure 2?

Ans: (a) _____ [1]

(b) _____ [3]

14. The figure is formed using one rectangle $ABCD$ and two identical squares $EFCG$ and $JKEM$. EC is a straight line, $DE = DH$ and $\angle BCF = 20^\circ$.
- (a) Find $\angle EDH$.
- (b) Find $\angle KLA$.



Ans: (a) _____ [2]

(b) _____ [2]

Answer Sheet

PAPER 1 (BOOKLET A)

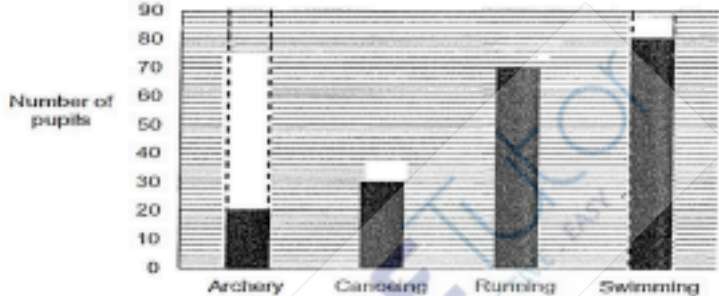
Q1	3	Q2	3	Q3	3	Q4	3	Q5	2
Q6	1	Q7	3	Q8	3	Q9	4	Q10	4
Q11	3	Q12	2	Q13	1	Q14	2	Q15	4

(BOOKLET B)

Q16	(54 - 4) 7 x 50 + 4 = 354		
Q17	21 40		
Q18	$9\frac{1}{3}$		
Q19	8.65		
Q20	44 x 3 = 132 A + B : 2u Mr L : 2u 4u = 132 1u = 33 33 x 2 = 66 kg		
Q21	a)	$\frac{3}{4} = \frac{15}{20}$ $\frac{15}{20} + \frac{4}{20} = \frac{19}{20}$	
	b)	$\frac{4}{5} \times \frac{1}{12} = \frac{1}{15}$	
Q22	Meters needed for 200 large : 1.34 x 200 = 2.68 x 100 = 268 Meters needed for 100 skills : 350 - 268 = 82 One by : 82 ÷ 100 = 0.82m		
Q23	10p - 2p = 8p 10p + 5p + 8p + 3p + 3p + 10p + 5p + 8p + = (52p) cm		
Q24	2.4 x 1000 = 2400 2.4km = 2400m D ÷ S = T $\frac{2400}{80} = 30\text{min}$		

Q25	$b = 114$ $c = 180 - 114$ $= 66$ $180 - 66 = 114$ $114 + 114 + 66 = 228 + 66$ $= 294$
Q26	$\$2 + 0.50 + 0.80 = \3.60
Q27	$25 \times 5 = 125 \text{ cm}$
Q28	$2u = 94 + 34$ $= 128$
Q29	$T : A$ $4 : 1$ $5u : 25\%$ $1u : 5\%$ $40\% : 240$ $1\% : 6$ $5\% : 6 \times 5 = 30$
Q30	$3A = 20$ $6A = 40$ $4u : 13 \text{ oranges}$ $1u = 13 \text{ oranges} \div 4\frac{13}{4}$ $= 3R1$ $3u = 3R1 \times 3$ $= 9R3$

(PAPER 2)

Q1	$3 - 2.40 = 0.60$ $\frac{\text{inc}}{\text{last yr}} = \frac{0.60}{2.40} \times 100 = 25$ Increase : $3 - 2.40 = 0.60$ $\frac{0.60}{2.40} \times 100 = 25\%$			
Q2	$25 - 10 = 15$ $50 - 15 = 35$ $15\% : 30$ $1\% : 30 \div 15 = 2$ $35\% : 35 \times 2$ $= 70$ $10\% = 2 \times 10$ $= 20$			
	 <p>a) 35% b) 90</p>			
Q3	$(180 - 104) \div 2 = 38$ $180 - 38 - 120 = 22^\circ$			
Q4	$8u = 56$ $1u = 56 \div 8$ $= 7$ $7 \times (15 + 20) = 245$			
Q5	Statement	True	False	Not to possible
	(a)	✓		
	(b)		✓	
	(c)			✓
Q6	$2 \text{ square} : (7 \times 7) \times 2 = 98$ Area of a : $21 \times 21 = 441$ $441 - 1\frac{1}{4} \times \frac{22}{7} \times 21 \times 711$ $98 + 94.5 = 192.5 \text{ cm}^2$			

Q7	$180 - 75 - 65 = 40$ $180 - 65 = 115$ $115 - 75 = 40$ $180 - 75 = 105$ $180 - 65 = 115$ $360 - 115 - 105 - 64 = 76$ a) 40° b) 76°																																																																
Q8	<table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr><tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td></tr><tr><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td>32</td></tr><tr><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr><tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td></tr><tr><td>49</td><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td></tr><tr><td>57</td><td>58</td><td>59</td><td>60</td><td>61</td><td>62</td><td>63</td><td>64</td></tr></table> a) $3 + 11 + 17 + 18 + 27 + 35 + 20 + 21 = 152$ $152 \div 8 = 19$ $396 \div 8 = 49.5$ Total of the 8 numbers divide 8 to find out average b) $21 + 29 + 35 + 36 + 45 + 53 + 38 + 39 = 296$ $= 296$ Ans: 53	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
1	2	3	4	5	6	7	8																																																										
9	10	11	12	13	14	15	16																																																										
17	18	19	20	21	22	23	24																																																										
25	26	27	28	29	30	31	32																																																										
33	34	35	36	37	38	39	40																																																										
41	42	43	44	45	46	47	48																																																										
49	50	51	52	53	54	55	56																																																										
57	58	59	60	61	62	63	64																																																										
Q9	Cost of 9 more pens $1.80 \times 9 = 16.20$ $16.20 - 5 = 11.20$ $11.20 \div 2.50 = 4.48$ $2.50 - 1.80 = 0.70$ No. of notebooks = $11.20 \div 0.70 = 16$																																																																
Q10	$235 + 121 + 123 + 81 = 560$ $75\% \times 560 = 420$ $420 - 111 - 140 - 89 = 80$ $100\% : 140$ $1\% : 1.4$ $120\% : 168$ a) 80 b) 168																																																																
Q11	$\frac{1}{15} : 20$ $\frac{15}{15} : 20 \times 15 = 300$ (a) $4 \text{ min} : 420 \text{ ml}$ $10 \text{ min} \rightarrow 5 \times 12 = 60$ $1 \text{ min} : 51$ or $= 60$ (b) $112 - 80 = 32$ $80 - 20 = 60$ $32 - 20 = 12$ $12 \div 4 = 3 \text{ L}$ (c)																																																																
Q12	$45 + 39 + 27 + 24 = 135$																																																																

	$135u = 540$ $1u = 540 \div 135$ $= 4$ $4 \times 39 = 156$ $45 \times 4 = 180$ $\frac{80}{100} \times 2 = 1.60$ $180 \times 1.60 = 288$ a) \$156 b) \$288
Q13	$40 \times 30 \times 70 = 84000$ $1800 + 1200 = 3000$ $84000 \div 3000 = 28\text{cm}$ a) 84L b) 28 cm

Q14	$ECH = 90 - 45 - 20$ $= 25$ $EHC = 180 - 45 - 25$ $= 110$ $180 - 110 = 70$ $180 - 70 - 70$ $= 40^\circ$ (A) $ALE = 360 - 90 - 90 - 50$ $= 130$ $180 - 130 = 50^\circ$ (B)
Q15	$40 - 16 = 24$ $\frac{1}{2} \times \pi \times 56 = 28\pi$ 2 medium semi : $(\frac{1}{2} \times \pi \times 40) \times 2$ $= 40\pi$ $12\pi + 28\pi + 40\pi = 80\pi$ $80\pi \approx 251.33$ a) 24cm b) 251.33 cm
Q16	$\frac{12}{48}$: red $\frac{8}{48}$: blue $48 - 8 - 12 = 28$ $\frac{28}{48} = \frac{7}{12}$ $1u = 300$ $300 \times 3 = 900$ $5u = 900$ $1u = 180$ $180 \times 8 = 1440$ a) $\frac{7}{12}$ b) 1440ml
Q17	R : S

$$1 : 7$$

$$3 : 21$$

$$\frac{2}{3} \times 21 = 14$$

$$U : L$$

$$17 : 7$$

$$17 + 7 = 24$$

$$1540 - 675 = 865$$

$$865 - 675 = 190$$

$$17u - 7u = 10u$$

$$10u : 190$$

$$1u : 19$$

$$17 + 7 = 24u$$

$$24u : 456$$

$$1540 - 456$$

$$= 1084$$

$$\text{a) } 17 : 7$$

$$\text{b) } 1084$$

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RAFFLES GIRLS' PRIMARY SCHOOL SA1 PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4). Shade your answer (1, 2, 3 or 4) on the OAS provided.
All diagrams are not drawn to scale. (20 marks)

1. In 7 435 602, the digit 3 is in the _____ place.

- (1) hundreds
- (2) thousands
- (3) ten thousands
- (4) hundred thousands

2. How many quarters are there in $6\frac{3}{4}$?

- (1) 13
- (2) 22
- (3) 27
- (4) 36

3. Express $\frac{15}{8}$ as a decimal.

- (1) 1.58
- (2) 1.625
- (3) 1.78
- (4) 1.875

4. Arrange these fractions from the largest to the smallest.

$2\frac{1}{4}$,	$\frac{16}{9}$,	$\frac{17}{8}$
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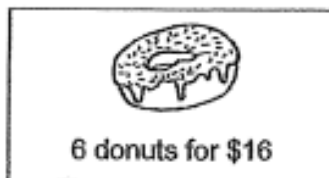
- | | <u>Largest</u> | , | <u>Smallest</u> |
|-----|----------------|---|-----------------|
| (1) | $2\frac{1}{4}$ | , | $\frac{16}{9}$ |
| (2) | $2\frac{1}{4}$ | , | $\frac{17}{8}$ |
| (3) | $\frac{17}{8}$ | , | $2\frac{1}{4}$ |
| (4) | $\frac{16}{9}$ | , | $2\frac{1}{4}$ |

5. Haris bought a packet of milk from the canteen. Which of the following could be the volume of the packet of milk?

- (1) 3 ml
 (2) 30 ml
 (3) 300 ml
 (4) 3000 ml



6. Donuts were sold in a shop as shown. Maria bought 54 donuts for her son's birthday party. How much did she pay for the donuts?

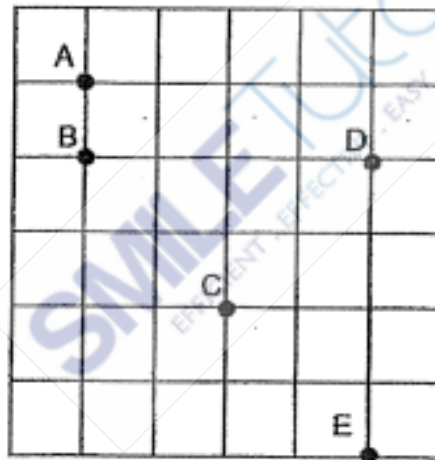


- (1) \$96
 (2) \$144
 (3) \$324
 (4) \$864

7. The number of chickens is $\frac{5}{6}$ of the number of ducks in a farm. Find the ratio of the number of chickens to the total number of ducks and chickens in the farm.

- (1) 5 : 6
- (2) 5 : 11
- (3) 6 : 5
- (4) 6 : 11

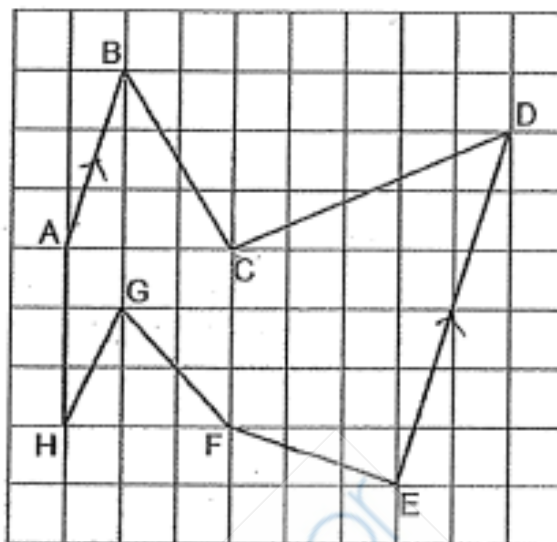
8.



In the square grid, point C is south-east of point _____.

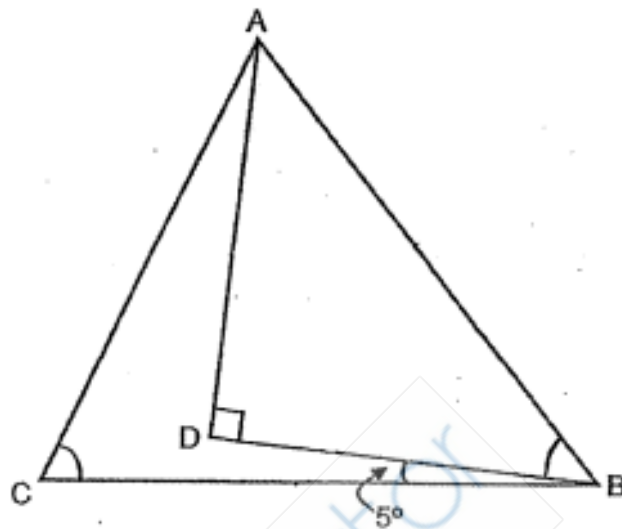
- (1) A
- (2) B
- (3) D
- (4) E

9. Which pair of lines are parallel to each other?



- (1) AB and HG
 - (2) BC and GF
 - (3) CD and FE
 - (4) DE and AB
10. A fish tank measures 20 cm by 30 cm by 50 cm. It contains 4.8 l of water. What percentage of the tank is filled with water?
- (1) 1.6%
 - (2) 0.84%
 - (3) 16%
 - (4) 84%

11. ABD is a right-angled isosceles triangle. ABC is an isosceles triangle, $AB = BC$. Find $\angle ACB$.



- (1) 45°
 - (2) 50°
 - (3) 65°
 - (4) 80°
12. Rick had \$900. He spent 30% of his money on a mini refrigerator and spent 90% of the remaining money on a camera. How much money did he spend on the camera?
- (1) \$270
 - (2) \$567
 - (3) \$630
 - (4) \$810

13. What is the missing number?

- (1) 2.092
- (2) 20.92
- (3) 209.2
- (4) 20920

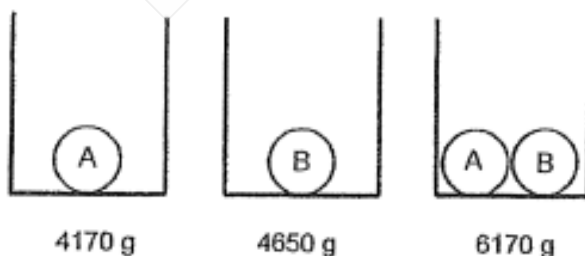
14. The ratio of the number of roses to the number of carnations is 5 : 6.

The ratio of the number of sunflowers to the number of carnations is 7 : 3.

There are 180 fewer roses than sunflowers. How many carnations are there?

- (1) 20
- (2) 60
- (3) 120
- (4) 270

15. The mass of a container with Ball A in it is 4170 g. The mass of the same container with Ball B in it is 4650 g. The total mass of the same container with both Ball A and Ball B in it is 6170 g. What is the mass of the container?



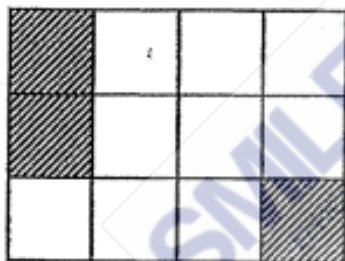
- (1) 480 g
- (2) 1520 g
- (3) 2000 g
- (4) 2650 g

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided.
 For questions that require units, give your answers in the units stated. All diagrams are
 not drawn to scale. (5 marks)

16. Find the value of $8 + (20 - 16 \div 2) \times 3$.

Ans: _____

17. The figure is made up of squares. How many more squares have to be shaded
 so that $\frac{2}{3}$ of the figure is shaded?



Ans: _____

18. Arrange the following from the greatest to the smallest.

2.704 , 2.074 , 2.74

Ans: _____
 Greatest

19. The table shows the number of books donated by some classes. What is the average number of books donated?

Name	Books
Pri 6 Gratitude	56
Pri 6 Courage	0
Pri 6 Generous	60
Pri 6 Caring	44

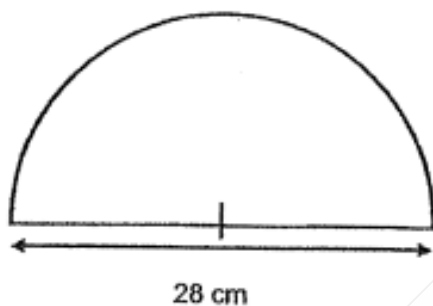
Ans: _____

20. Edward left his house at 08 55. He took 15 min to reach the beach. He left the beach at 12 25. How long was he at the beach?
Give your answer in h and min.

Ans: _____h_____min

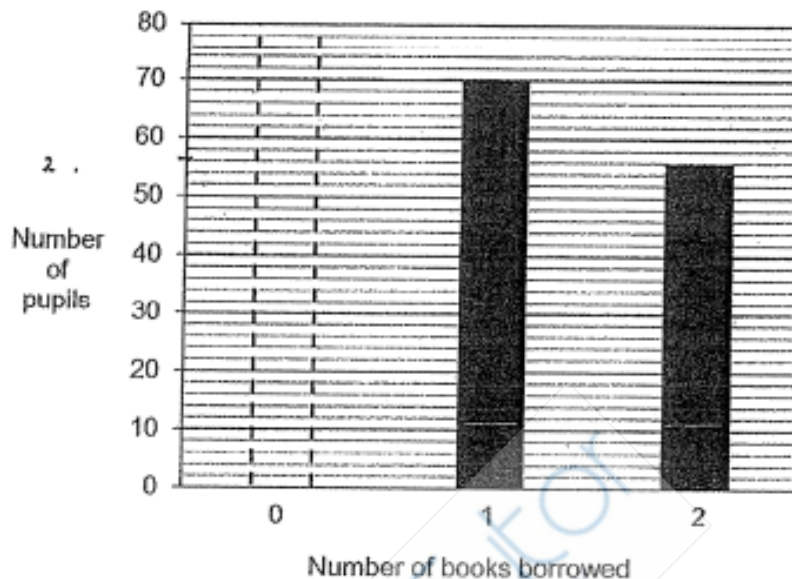
Questions 21 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions that require units, give your answers in the units stated. All diagrams are not drawn to scale. (20 marks)

21. Find the area of the figure. Take $\pi = \frac{22}{7}$.



Ans: _____ cm²

22. The bar graph shows the number of books borrowed by the P6 pupils in a month. $\frac{7}{9}$ of the pupils borrowed at least 1 book. How many pupils did not borrow any book?



Ans: _____

23. Mr Karim had 17 ℓ of cooking oil. He used 0.64 ℓ of cooking oil. He poured the remaining cooking oil equally into 8 containers. How many litres of cooking oil were there in each container? Round your answer to 1 decimal place.

Ans: _____ ℓ

24. Jeanette had a piece of string $\frac{2}{7}$ m long. She cut it into $\frac{1}{9}$ m equal pieces.

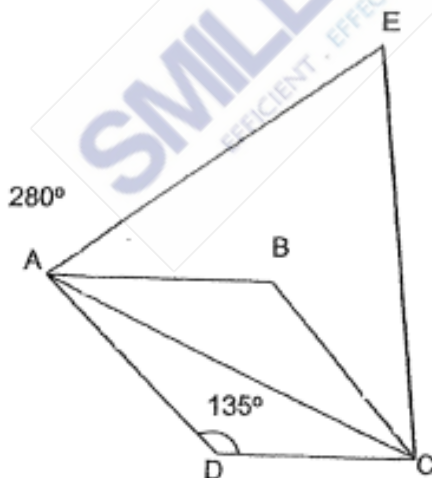
(a) How many $\frac{1}{9}$ m pieces of string were there at most?

(b) What was the length of the piece of string left over?

Ans : (a) _____

(b) _____ m

25. ABCD is a trapezium. AB is parallel to DC. AEC is an equilateral triangle.
Find $\angle BAC$.



Ans: _____ °

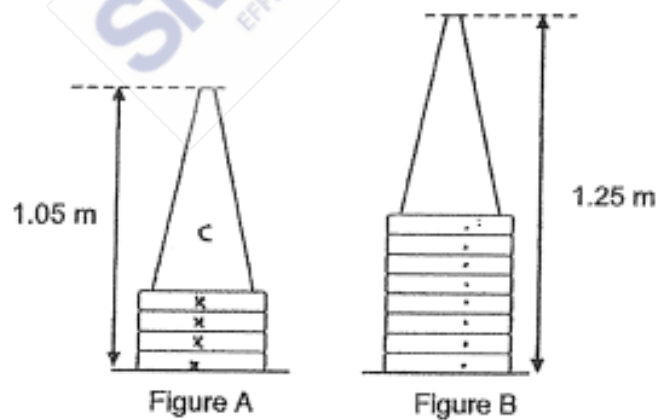
26. The table shows the charges for the rental of a minibus.

First 2 hours	\$90
Every additional hour	\$40

A group of tourists paid \$330 for the rental of a minibus. How many hours did they rent the minibus for?

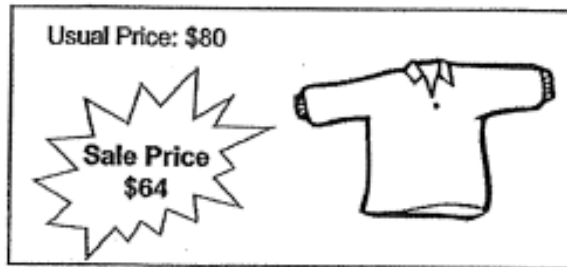
Ans: _____ h

27. The figure shows 2 stacks of identical traffic cones. There are 4 traffic cones in Figure A and 8 traffic cones in Figure B. What is the height when 16 traffic cones are put together in one stack?



Ans: _____ m

28. What is the percentage discount for the shirt shown?

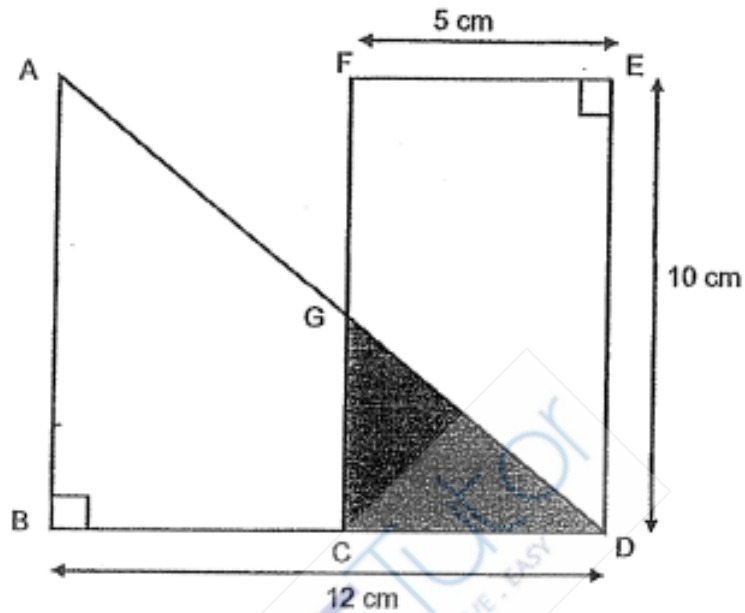


Ans: _____ %

29. Caroline has some stickers. If she gives each of her cousins 8 stickers, she will not have any stickers left for herself. If she gives each of them 5 stickers, she will have 18 stickers left. How many stickers does Caroline have?

Ans: _____

30. The figure is made up of triangle ABD and rectangle FEDC which overlaps each other. $AB = ED$. The area of the shaded triangle GDC is 32 cm^2 . Find the area of the unshaded regions.



Ans: _____ cm^2

End of Paper
 ☺ Please check your work carefully ☺

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (10 marks)

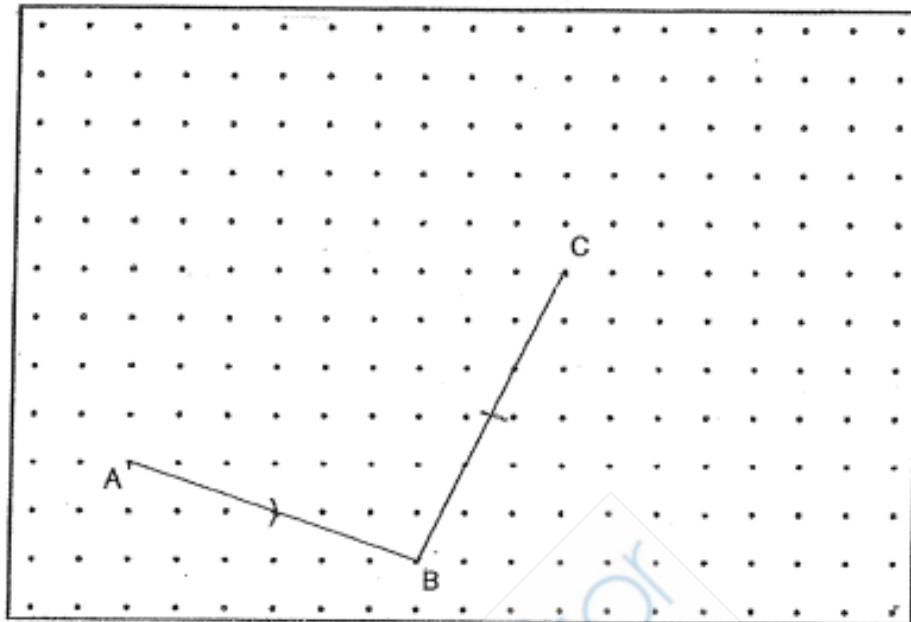
1. A flag pole is 2.1 m high. It is 5% higher than the tree beside it. What is the height of the tree in centimetres?

Ans : _____ m

2. 3 years ago, Ayden was 15 years old. This year, Serene's age is $\frac{4}{7}$ of their total age. Find the ratio of Serene's age to Ayden's age in 8 years' time. Give your answer in the simplest form.

Ans : _____

3. AB and BC are 2 straight lines drawn on a square grid inside a box.



By joining dots on the grid with straight lines within the box,

- draw trapezium ABCD such that AB is parallel to CD and AB is $\frac{2}{3}$ the length of CD. [1]
 - draw another triangle BCE such that CB = CE and $\angle BCD = 90^\circ$. [1]
4. The average height of Jason, Kelly and Linda is 167 cm. Kelly and Linda have an average height of 162 cm. How tall is Jason?

Ans : _____ cm

5. At a concert, $\frac{1}{4}$ of the audience were children and the rest were adults. Each child received 2 light sticks while each adult received a light stick. During a break, some adults left the concert.

Each statement below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

Statement	True	False	Impossible to tell
(a) The number of light sticks given to the adults were more than the number of light sticks given to the children.			
(b) There were more men than women at the concert at first.			
(c) After the break, the fraction of audience who were children decreased.			

For questions 6 to 17, show your working clearly in the space provided for each question and write your answers in the spaces provided.

The number of marks available is shown in brackets [] at the end of each question or part-question. All diagrams are not drawn to scale. (45 marks)

6. Yan Ling paid \$5.50 for 1 kg of meat on Day 1. The price of the meat increased by 20% on Day 2. On Day 3, the price of the meat decreased to 75% of Day 2's price.

(a) What was the price of the meat on Day 2?

(b) How much did Yan Ling pay for 2.4 kg of meat on Day 3?

Ans : (a) _____ [1]

(b) _____ [2]

7. The first 19 numbers of a number pattern are as shown.

4, 0, 1, 0, 1, 4, 4, 0, 1, 0, 1, 4, 4, 0, 1, 0, 1, 4, 4,

1st

(a) What is the 521st number?

(b) What is the sum of the first 521 numbers?



Ans : (a) _____ [1]

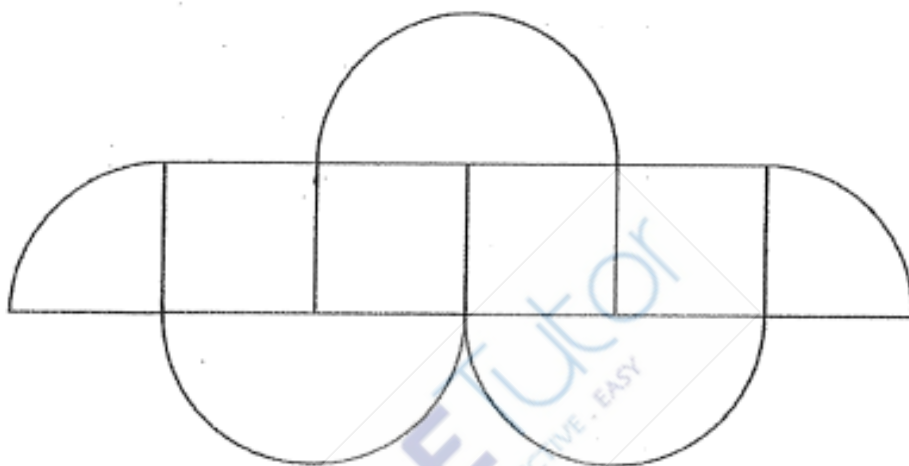
(b) _____ [2]

8. The figure shows a walking path at a botanical garden. It consists of 3 identical semicircles, 2 identical quarter circles and 4 identical squares. The area of one square is 625 m^2 . Mr Min walked around the perimeter of the garden 4 times.

(a) What is the diameter of a semicircle?

(b) Use the calculator value of π to find the total distance Mr Min walked.

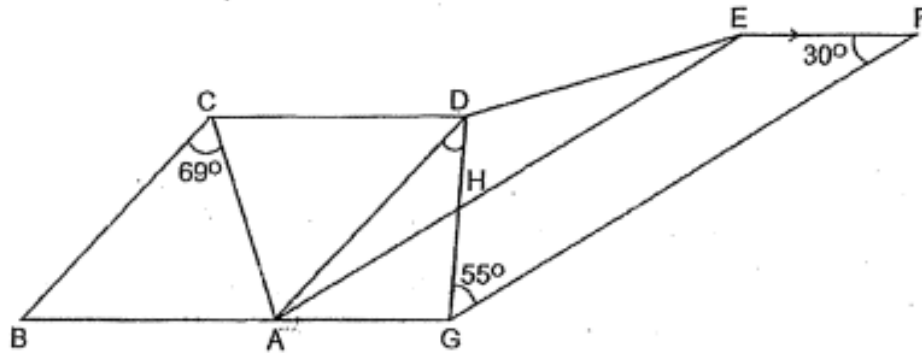
Round your answer to 2 decimal places:



Ans : (a) _____ [1]

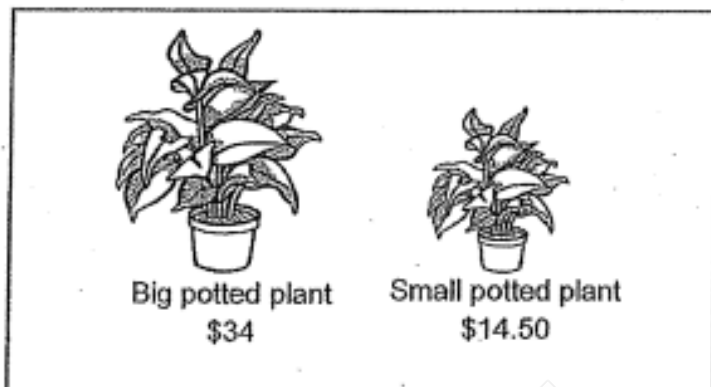
(b) _____ [3]

9. ABCD is a rhombus and AEFG is a parallelogram. BAG and DHG are straight lines. Find $\angle ADG$.



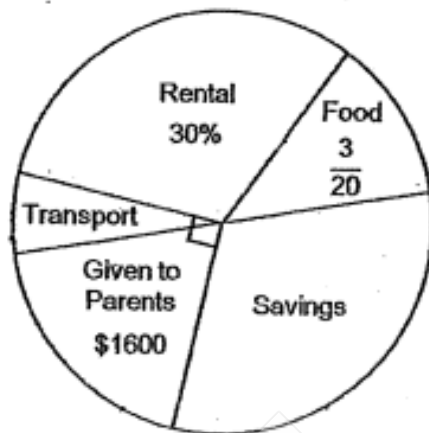
Ans : _____ [3]

10. Mr Kang spent a total amount of \$3087.50 on some potted plants for his garden. For every 4 big potted plants he bought, he bought 7 small potted plants. How many potted plants did Mr Kang buy altogether?



Ans : _____ [3]

11. The pie chart shows how Su-Lynn spends her monthly salary. Half of her monthly salary is spent on transport, rental and food.



- (a) What percentage of Su-Lynn's monthly salary is spent on transport?
- (b) How much does Su-Lynn save per month?

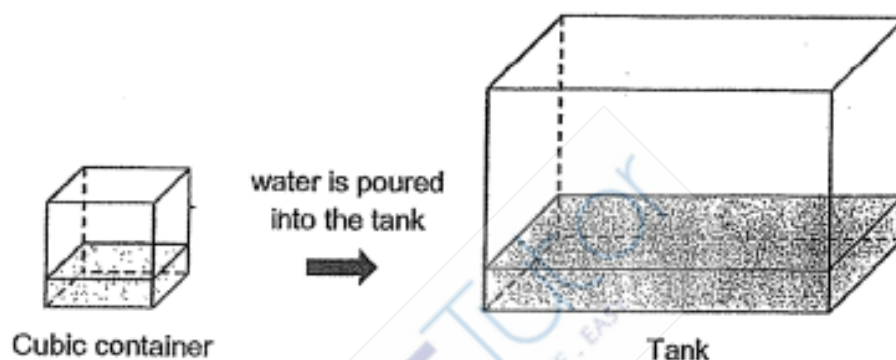
Ans : (a) _____ . [1]

(b) _____ . [2]

12. A cubic container was completely filled with water. When $\frac{3}{4}$ of the water from the container was poured into the rectangular tank, the tank was $\frac{1}{5}$ full. The capacity of the tank was 4752 ml more than the capacity of the cubic container.

(a) What was the volume of the cubic container?

(b) What was the volume of the tank?



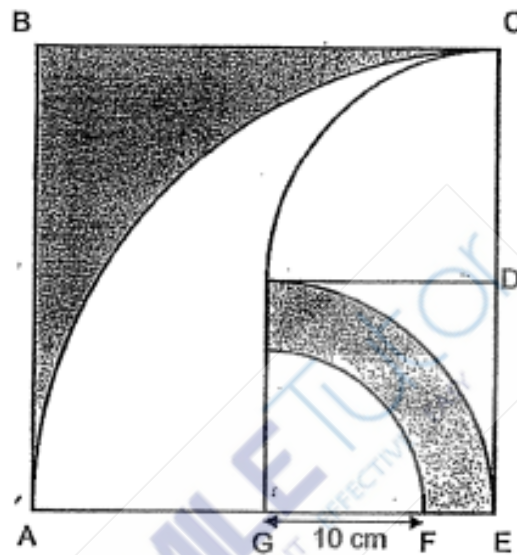
Ans : (a) _____ [3]

(b) _____ [1]

13. The figure shows one big quarter circle, two identical medium quarter circles and one small quarter circle. ABCE is a square of side 28 cm. $AG = GE$. The radius of the small quarter circle is 10 cm.

- (a) What is the area of the big quarter circle ACE?
 (b) What is the area of the shaded part?

Take $\pi = 3.14$.



Ans : (a) _____ [2]

(b) _____ [3]

14. There were 225 tokens in a box. The number of black, white and grey tokens were in the ratio of 4 : 6 : 5. A shopkeeper added another 81 tokens into the box. As a result, the number of black tokens increased by 20% and the number of white tokens increased by 30%.
- (a) How many grey tokens were there in the box at first?
- (b) Find the percentage increase in the number of grey tokens.



Ans : (a) _____ [1]

(b) _____ [3]

15. Norah arranged 11 candles in each row. She found another 17 candles and rearranged them such that there were 8 candles in each row. In the end, there were 13 more rows of candles than before. How many rows of candles were there at first?



Ans : _____ [3]

16. There were some blue and yellow beads in Box A and Box B. In Box A, the ratio of the number of blue beads to the number of yellow beads was 3 : 7. In Box B, the number of yellow beads was 55% of the number of blue beads.

After transferring half of the yellow beads from Box A to Box B, there were 546 beads in Box A. The ratio of the number of blue beads to the number of yellow beads in Box B after the transfer became 5 : 8.

- (a) How many yellow beads were transferred from Box A to Box B?
(b) What was the number of blue beads in Box B?



Ans : (a) _____ [3]

(b) _____ [2]

17. Ellie baked some cookies. She gave $\frac{7}{10}$ of them to her relatives and 58 of them to her friends. She was left with $\frac{1}{5}$ of the cookies. She packed these into 15 boxes. Some boxes contained 4 cookies while the rest contained 12.
- (a) How many cookies were packed into 15 boxes?
- (b) How many boxes contained 4 cookies?

Ans : (a) _____ [3]

(b) _____ [2]

End of Paper

☺ Please check your work carefully ☺

Answer Sheet

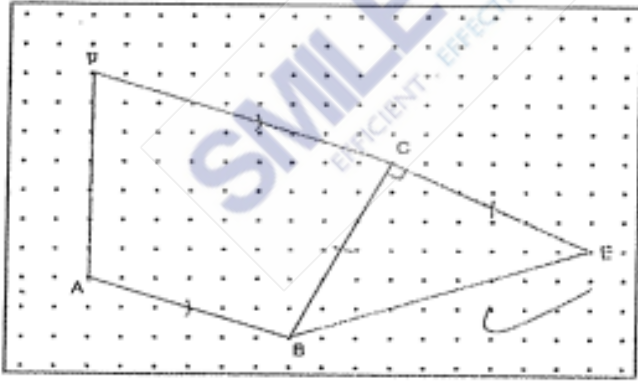
Paper 1 Booklet A Q1	2
Paper 1 Booklet A Q2	3
Paper 1 Booklet A Q3	4
Paper 1 Booklet A Q4	1
Paper 1 Booklet A Q5	3
Paper 1 Booklet A Q6	2
Paper 1 Booklet A Q7	2
Paper 1 Booklet A Q8	2
Paper 1 Booklet A Q9	4
Paper 1 Booklet A Q10	3
Paper 1 Booklet A Q11	3
Paper 1 Booklet A Q12	2
Paper 1 Booklet A Q13	1
Paper 1 Booklet A Q14	3
Paper 1 Booklet A Q15	4

Paper 1 Booklet B Q16	$8 + (20 - 16 \div 2) \times 3$ $= 8 + 12 \times 3$ $= 8 + 36$ $= 44$
Paper 1 Booklet B Q17	$8 - 3 = 5$
Paper 1 Booklet B Q18	2.73, 2.704, 2.074
Paper 1 Booklet B Q19	$\text{Total} = 56 + 60 + 44 + 0$ $= 160$ $\text{Ave} = 160 \div 4$ $= 40$

Q20)	$1\text{h} + 1\text{h} + 1\text{h} + 15\text{min} = 3\text{h } 15\text{min}$
Q21)	$\frac{1}{2} \times \frac{22}{7} \times 14 \times 14$ $= 308\text{cm}^2$
Q22)	$\frac{7}{9} \rightarrow 70 + 56 = 126$ $\frac{1}{9} \rightarrow 126 \div 7 = 18$ $\frac{2}{9} \rightarrow 18 \times 2 = 36$
Q23)	$17 - 0.64 = 16.36$ $16.36 \div 8 = 2.045$ $2.045 \approx 2.0 \text{ ¢}$
Q24)	<p>a) $\frac{2}{7} + \frac{1}{9} = \frac{2}{7} \times \frac{9}{1}$</p> $= \frac{18}{7}$ $= 2\frac{4}{7}$ <p>b) used $= \frac{1}{9} \times \frac{2}{1}$</p> $= \frac{2 \times 7}{9 \times 7} = \frac{14}{63}$ $= \frac{2 \times 9}{7 \times 9} = \frac{18}{63}$ $= \frac{18}{63} - \frac{14}{63}$ $= \frac{4}{63}$ <p>Ans: a) 2</p> <p>b) $\frac{4}{63}$</p>

Q25)	$\angle DAC = 360^\circ - 280^\circ - 60^\circ$ $= 20^\circ$ $\angle BAC = 180^\circ - 135^\circ - 20^\circ$ $= 25^\circ$
Q26)	First 2h = 90 $330 - 90 = 240$ $240 \div 40 = 6$ $6 + 2 = 8\text{h}$
Q27)	$C + 4X = 1.05$ $C + 8X = 1.25$ $4X = 0.20$ $C = 0.85$ $16X = 0.80$ $0.8 + 0.85 = 1.65 \text{ m}$
Q28)	Discount = $80 - 64 = 16$ $\frac{16 \div 4}{80 \div 4} = \frac{4}{20}$ $\frac{4 \times 5}{20 \times 5} \times 100\% = 20\%$
Q29)	$8s = 5s + 18$ $3s = 18$ $S = 6$ $6 \times 8 = 48$
Q30)	Area of big triangle = $\frac{1}{2} \times 10 \times 12$ $= 60$ $= 60 - 32 = 28$ Area of rectangle = $5 \times 10 = 50$ $= 50 - 32 = 18$ Unshaded = $18 + 28 = 46\text{cm}^2$

PAPER 2

Q1)	$105\% = 2.1$ $1\% = 0.02$ $100\% = 0.02 \times 100$ $= 2$ $2\text{m} = 200\text{cm}$						
Q2)	$15 + 3 = 18$ $3u = 18$ $1u = 18 \div 3 = 6$ $\text{Serene} = 4 \times 6 + 8$ $= 32$ $\text{Ayden} = 6 \times 3 + 8$ $= 26$ $\text{Ans: } 16 : 13$ <table border="1" data-bbox="779 724 941 934"> <thead> <tr> <th>S</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>32</td> <td>26</td> </tr> <tr> <td>16</td> <td>13</td> </tr> </tbody> </table>	S	A	32	26	16	13
S	A						
32	26						
16	13						
Q3)							
Q4)	$J + K + L = 167 \times 3$ $= 501$ $K + L = 162 \times 2$ $= 324$ $J = 501 - 324 = 177\text{cm}$						

Q5)	<table border="1"><tr><td>√</td><td></td><td></td></tr><tr><td></td><td></td><td>√</td></tr><tr><td></td><td>√</td><td></td></tr></table>	√					√		√	
√										
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Q6)	<p>100% of Day 1 = 5.5 1% of Day 1 = 0.055 120% of Day 1 = 0.055 x 120 = 6.6 100% of Day 2 = 6.6 1% of Day 2 = 0.066 75% of Day 2 = 0.066 x 75 = 4.95 1kg of meat = 4.95 2.4kg of meat = 4.95 x 2.4 = 11.88 Ans: (a) \$6.60 (b) \$11.88</p>									
Q7)	<p>a) $521 \div 6 = 86 \text{ R}5$ b) $4 + 1 + 1 + 4 = 10$ (one set) $86 \times 10 = 860$ $860 + 4 + 1 + 1 = 866$ Ans: a) 1 b) 866</p>									
Q8)	<p>a) $625 = 25 \times 25$ $25 + 25 = 50\text{m}$ b) Arc length of circle = $2 \times \pi \times 50$ = 314.16 (correct to 2.d.p.)</p>									

	$\text{Peri} = 314.16 + 25 \times 4$ $= 414.16$ $\text{Total distance} = 414.16 \times 4$ $= 1656.64 \text{ m}$
Q9)	$\angle AGD = 180^\circ - 30^\circ - 55^\circ$ $= 95^\circ$ $\angle CBA = 180^\circ - 69^\circ - 69^\circ$ $= 42^\circ$ $\angle DAB = 180^\circ - 42^\circ$ $= 138^\circ$ $\angle ADG = 138^\circ - 95^\circ$ $= 43^\circ$
Q10)	$1 \text{ set} = 34 \times 4 + 7 \times 14.5$ $= 237.5$ $\text{No. of sets} = 3087.5 \div 237.5$ $= 13$ $\text{Big} = 13 \times 4$ $= 52$ $\text{Small} = 13 \times 7$ $= 91$ $\text{Total} = 52 + 91$ $= 143$
Q11)	<p>a) $\frac{10}{20} - \frac{9}{20} = \frac{1}{20}$</p> $\frac{1}{20} \times 100\% = 5\%$ <p>b) $\frac{4}{20}$ of money = 1600</p>

	$\frac{1}{20} \text{ of money} = 1600 \div 4$ $= 400$ $\text{Saved} = 400 \times 6 = \2400
Q12)	<p>a) $11u = 4752$ $1u = 4752 \div 11$ $= 432$ vol. of container $= 432 \times 4$ $= 1728 \text{ cm}^3$</p> <p>b) vol. of tank $= 432 \times 15$ $= 6480 \text{ cm}^3$</p>
Q13)	<p>a) $\frac{1}{4} \times 3.14 \times 28 \times 28$ $= 615.44 \text{ cm}^2$</p> <p>b) Area of $\square = 28 \times 28$ $= 784$ Area of 1st shaded part $= 784 - 615.44$ $= 168.56$ Area of medium $= \frac{1}{4} \times 3.14 \times 14 \times 14$ $= 153.86$ Area of small $= \frac{1}{4} \times 3.14 \times 10 \times 10$ $= 78.5$ Area of 2nd shaded part $= 153.86 - 78.5$ $= 75.36$ Shaded $= 168.56 + 75.36$ $= 243.92 \text{ cm}^2$</p>

Q14)	$\begin{aligned} \text{a) } 15u &= 225 \\ 1u &= 225 \div 15 \\ &= 15 \\ \text{Grey at first} &= 15 \times 5 \\ &= 75 \\ \text{b) } 2.6u &= 15 \times 2.6 \\ &= 39 \\ \text{Grey increase} &= 81 - 39 \\ &= 42 \\ \frac{42}{75} \times 100\% &= 56\% \end{aligned}$
Q15)	$\begin{aligned} 11u + 17 &= 8u + 104 \\ 3u &= 87 \\ 1u &= 87 \div 3 \\ &= 29 \end{aligned}$
Q16)	$\begin{aligned} \text{a) } 6.5u &= 546 \\ 1u &= 546 \div 6.5 \\ &= 84 \\ 3.5u &= 84 \times 3.5 \\ &= 294 \\ \text{b) } 21p &= 294 \\ 1p &= 294 \div 21 \\ &= 14 \\ 20p &= 14 \times 20 \\ &= 280 \end{aligned}$
Q17)	$\begin{aligned} \text{a) } \frac{6}{20} - \frac{4}{20} &= \frac{2}{20} \\ \frac{2}{20} &= 58 \\ \frac{1}{20} &= 29 \\ \frac{4}{20} &= 29 \times 4 \\ &= 116 \end{aligned}$

$\begin{aligned} \text{b) } 15 \times 12 &= 180 \\ 180 - 116 &= 64 \\ 12 - 4 &= 8 \\ 64 \div 8 &= 8 \end{aligned}$
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RED SWASTIKA PAPER PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the
 Optical Answer Sheet. (20 marks)

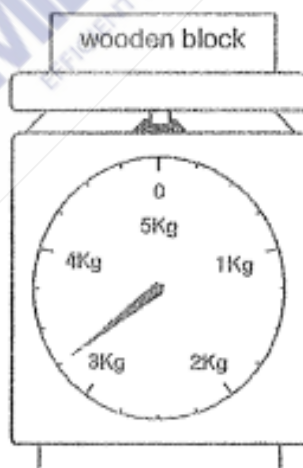
1 Which of the following is fifty-six thousand and three in numerals?

- (1) 5603
- (2) 56 003
- (3) 560 003
- (4) 5 600 003

2 Round off 83.569 to the nearest tenth.

- (1) 80
- (2) 84
- (3) 83.6
- (4) 83.57

3 What is the mass of the wooden block below?

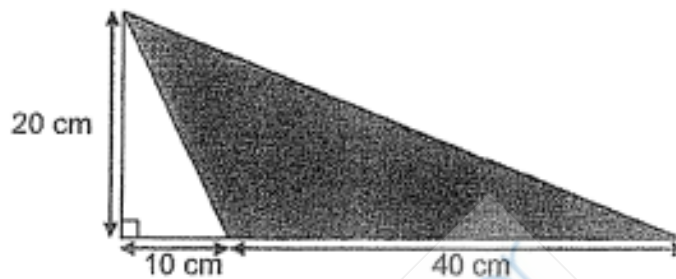


- (1) 3 kg 150 g
- (2) 3 kg 200 g
- (3) 3 kg 250 g
- (4) 3 kg 300 g

4 Express 70 km 8 m in metres.

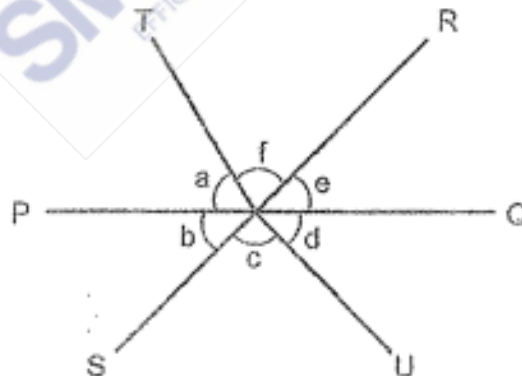
- (1) 708 m
- (2) 7008 m
- (3) 70 008 m
- (4) 700 008 m

5 What is the area of the shaded triangle?



- (1) 100 cm²
- (2) 400 cm²
- (3) 500 cm²
- (4) 800 cm²

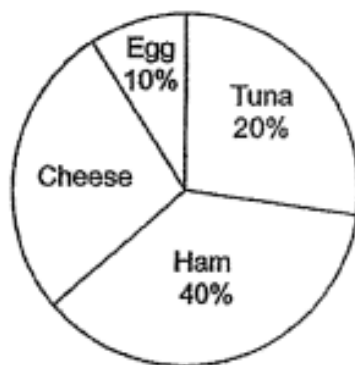
6 In the figure, PQ and RS are straight lines.



Which one of the following is true?

- (1) $\angle a = \angle d$
- (2) $\angle b = \angle e$
- (3) $\angle a + \angle b = \angle e + \angle d$
- (4) $\angle b + \angle c = \angle e + \angle f$

- 7 The pie chart shows the different types of sandwiches sold at a stall.



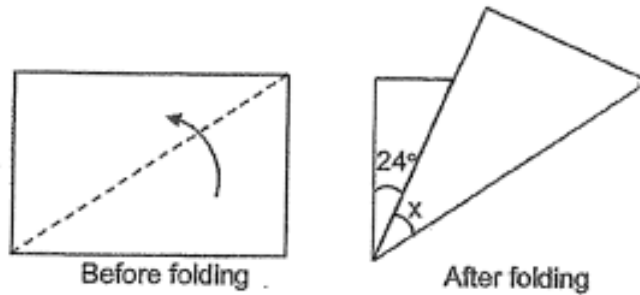
What is the ratio of the number of tuna sandwiches sold to the number of cheese sandwiches sold?

- (1) 2 : 3
 - (2) 3 : 2
 - (3) 4 : 5
 - (4) 5 : 4
- 8 Find the value of $9c - 3 + 2c$ when $c = 7$.
- (1) 28
 - (2) 46
 - (3) 67
 - (4) 74

- 9 Which one of the following fractions is the largest?

- (1) $\frac{2}{3}$
- (2) $\frac{2}{5}$
- (3) $\frac{3}{8}$
- (4) $\frac{5}{8}$

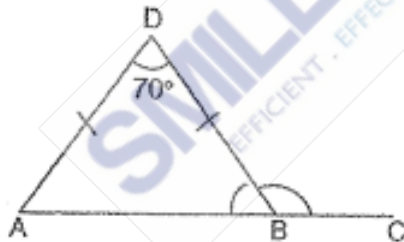
- 10 Vinush has a rectangular piece of paper. He folded it along the dotted line as shown below.



Find $\angle x$.

- (1) 21°
- (2) 33°
- (3) 42°
- (4) 66°

- 11 ABC is a straight line and ABD is an isosceles triangle. $\angle ADB = 70^\circ$ and $DA = DB$.



Find $\angle DBC$.

- (1) 110°
- (2) 125°
- (3) 135°
- (4) 140°

- 12 The clock below shows the time Ian reached the cinema.



Ian was 10 minutes late for the movie. What time did the movie start?

- (1) 7.35 p.m.
- (2) 7.55 p.m.
- (3) 8.35 p.m.
- (4) 8.55 p.m.

- 13 The table shows the number of books borrowed from a library by the children in a class.

Number of books	0	1	2	3	4
Number of children	3	9	4	8	2

How many children borrowed more than 2 books?

- (1) 10
- (2) 12
- (3) 14
- (4) 16

- 14 Kumar travelled $\frac{1}{3}$ of his journey in 2 h. He then travelled the remaining 240 km at a speed of 80 km/h. Find Kumar's average speed for the whole journey.

- (1) 60 km/h
- (2) 66 km/h
- (3) 70 km/h
- (4) 72 km/h

- 15 Mrs Yati chained some circular white, grey and black beads together in a repeated pattern as shown below. The radius of each bead is 2 cm.



Using the pattern above, Mrs Yati made a 100 cm chain of beads. How many grey beads did she use?

- (1) 5
- (2) 10
- (3) 20
- (4) 40



Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

16 Find the value of $30 - 8 + 16 \div 4 + 2$.

Ans: _____

17 Measure and write down the size of $\angle m$.

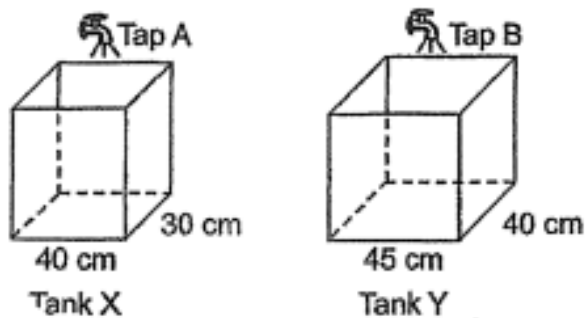


Ans: _____

18 Find the average of 17 and 28.

Ans: _____

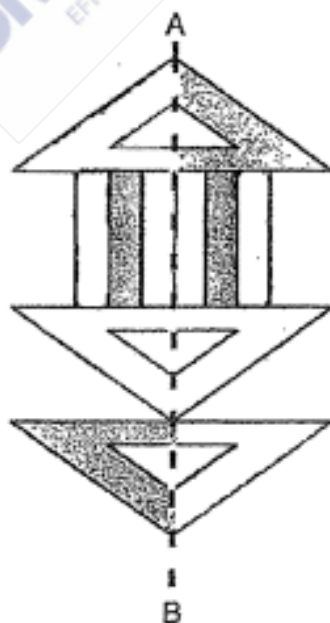
- 10 The figure shows taps A and B with two empty tanks X and Y. The height of both tanks are the same. Both taps are turned on at the same time.



Water flowed from tap A into tank X at a rate of 2 litres per minute. What should the rate of flow of water be from tap B such that the height of water is the same for both tanks after some time?

Ans: _____ l / min

- 20 The figure below is made up of triangles and rectangles. Shade the figure so that the figure has AB as its line of symmetry with $\frac{2}{3}$ of the figure shaded.



Questions 21 to 30 carry 2 marks each. Show your workings clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(20 marks)

-
- 21 How many sixths are there in $2\frac{1}{3}$?

Ans: _____

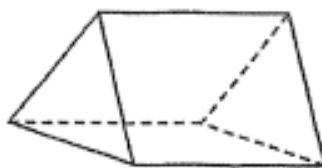
-
- 22 Mrs Devi poured 8.08 l of water equally into 40 identical containers. How many litres of water did she pour into each container?

Ans: _____ l

-
- 23 The perimeter of a square is 36 cm. Find the area of the square.

Ans: _____ cm²

24 Study the solid below.



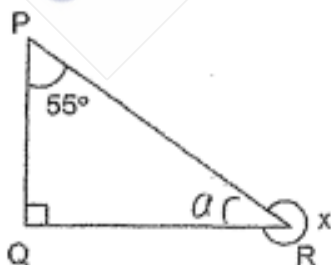
(a) Name the solid.

Ans: _____ [1]

(b) How many triangular and rectangular faces are there in the solid?

Ans: _____ triangular faces and _____ rectangular faces [1]

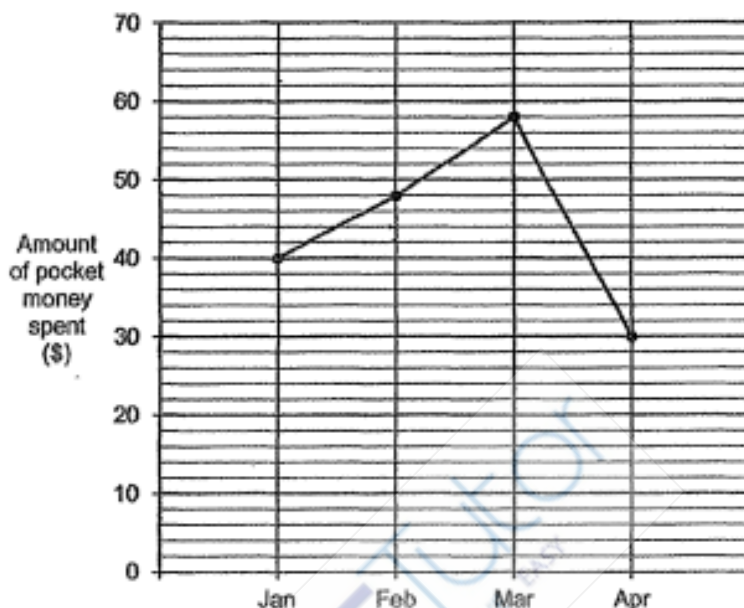
25 PQR is a right-angled triangle. $\angle QPR = 55^\circ$. Find $\angle x$.



Ans: _____

Use the information below to answer Questions 26 and 27.

Aisha received \$80 from her parents each month for her pocket money. After spending, she saved the rest of her money. The line graph below shows the amount of pocket money Aisha spent each month.



26 How much did Aisha save in February?

Ans: \$ _____

27 In which month did Aisha save the most?

Ans: _____

- 28 The table below shows A, B and C which represent three 2-digit numbers. Lydia used two pieces of paper to cover two of the digits in the table. The average of these 3 numbers is 25.

A	15
B	2
C	9

What number is represented by C?

Ans: _____

- 29 Josh and Ken started cycling from the same place in opposite direction along a straight road. Josh was cycling at 20 km/h and the two boys were 50 km apart after cycling for 90 minutes.

(a) How far did Josh cycle?

Ans: (a) _____ km [1]

- (b) Circle the words that describe Josh and Ken's cycling speed correctly in the following statement:

Ken was cycling (slower than / as fast as / faster than) Josh.

[1]

- 30 Mrs Wong placed an equal number of beads into 24 boxes. However, she discovered 4 of her boxes were damaged and she redistributed the beads in these boxes into the remaining 20 boxes. In the end, the number of beads in each of the remaining boxes increases by n . How many beads were there in each box at first? Give your answer in terms of n .

Ans: _____

Questions 1 to 5 carry 2 marks each. Show your workings clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

- 1 Use all the digits 6, 1, 8, 7 to form
(a) a 4-digit number which has 2 as one of its factors,

Ans: (a) _____ [1]

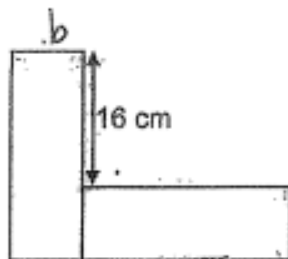
- (b) a 4-digit number closest to 8000.

Ans: (b) _____ [1]

- 2 Dan and Kate had some stickers. When Dan gave 10 of his stickers to Kate, he would have three times as many stickers as Kate. If Dan gives another 6 more stickers to Kate, he would have twice as many stickers as Kate. How many stickers did Kate have at first?

Ans: _____

- 3 Kim used two identical rectangles to form the figure as shown below. The perimeter of the figure is 112 cm. Find the perimeter of one rectangle.



Ans: _____ cm

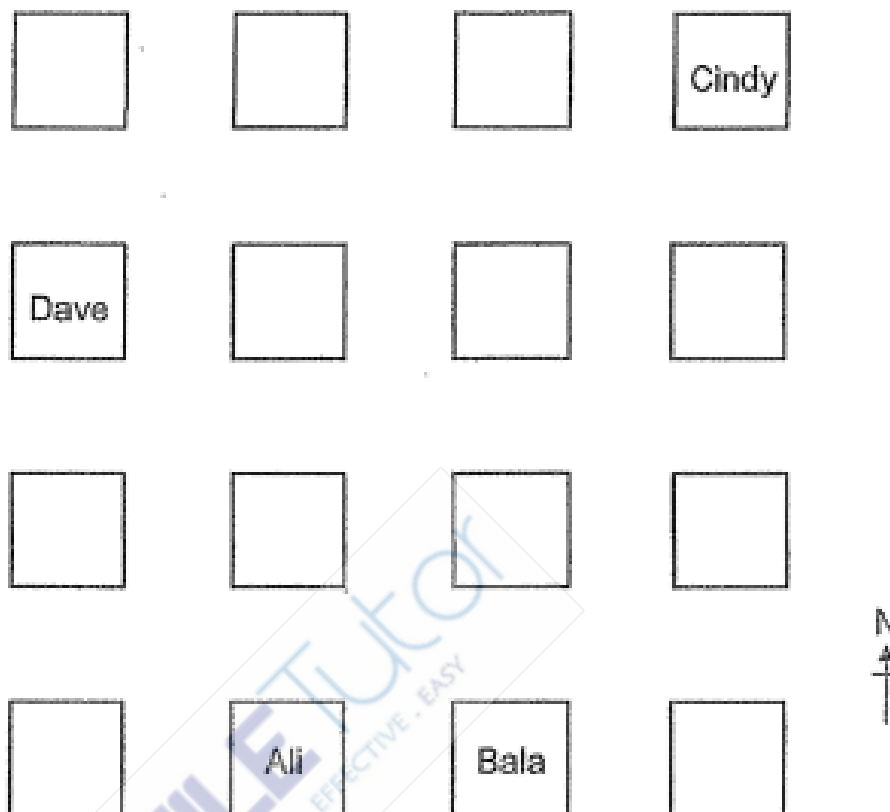
- 4 Mr Gan bought w bales of cloth to prepare some banners. Each banner is 240 cm in length and none of the banners are made by joining pieces of cloth. Each bale of cloth is 11 m long. What is the maximum number of banners Mr Gan could prepare? Give your answer in terms of w .



1 bale of cloth

Ans: _____

- 5 The picture below shows part of the seating plan of a classroom.



- (a) Circle the words that describe Ali and Bala's seating position correctly in the following statement:

Ali is seated (north / south / east / (west)) of Bala.

[1]

- (b) Cindy is seated north-east of Xavier and Dave is seated north-west of Xavier. Put a tick (✓) in the square where Xavier is seated.

[1]

For Questions 6 to 17, show your workings clearly in the space below each question and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question.

(45 marks)

-
- 6 A container, $\frac{2}{5}$ filled with sand, weighed 2400 g. After Mindy poured in another 200 cm³ of sand, the container became $\frac{1}{2}$ full.

(a) Find the capacity of the container in cubic centimetres.

Ans:(a) _____ [2]

- (b) Given that the total mass increased by 300 g, find the percentage increase in the total mass.

Ans:(b) _____ [1]

- 7 Claire went shopping with 12 more ten-dollar notes than two-dollar notes. After paying \$180 for a suitcase with some ten-dollar notes, the number of the two-dollar notes she had was four times the number of ten-dollar notes left.

(a) How many ten-dollar notes did Claire have left?

Ans:(a) _____ [1]

(b) How much money did she have at first?

Ans:(b) _____ [2]

- 8 Mrs Lee prepared some nuggets and chicken wings for a group of children. The ratio of the number of nuggets prepared to the number of chicken wings prepared was 8 : 3. Each child was given 5 nuggets and 2 chicken wings. There were 9 nuggets left when all the chicken wings were distributed.

(a) How many chicken wings did Mrs Lee prepare?

Ans: (a) _____ [2]

(b) How many children were there in the group?

Ans: (b) _____ [1]

- 9 At a concert, 60% of the tickets were sold at full price and 35% of the tickets were sold at half price. The remaining 70 tickets were given away free. The total amount of money collected was \$6510.

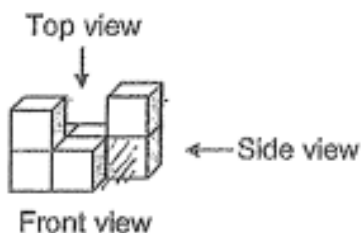
(a) How many tickets were sold at full price?

Ans:(a) _____ [1]

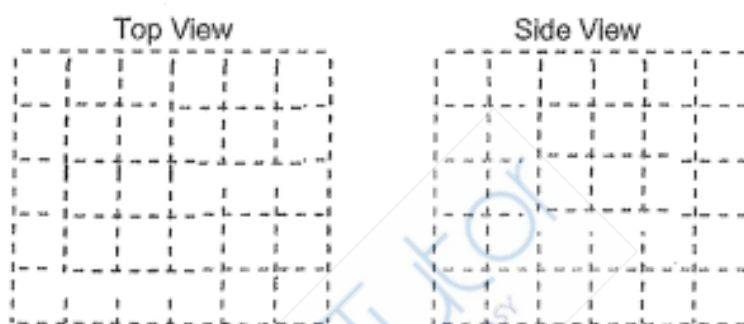
(b) What was the full price of a ticket?

Ans:(b) _____ [2]

- 10 Eva builds a solid using 7 unit cubes.



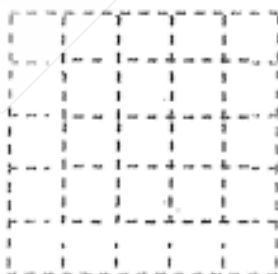
- (a) On the square grid below, draw the top and the side view of the solid.



[2]

- (b) What is the least number of cubes Eva could add to her solid such that both the top view and side view of her new solid look like Figure X as shown below.

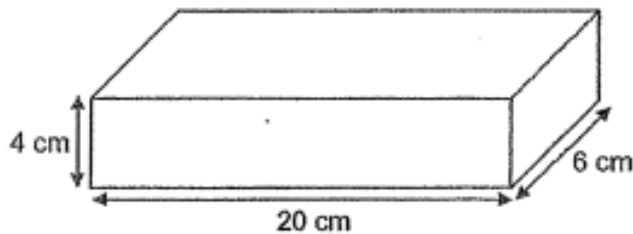
Figure X



Ans:(b) _____ [1]

- 11 Eason wanted to make a paper cuboid measuring 20 cm by 6 cm by 4 cm as shown in Figure 1.

Figure 1

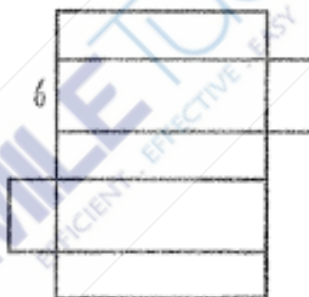


- (a) Find the volume of the cuboid.

Ans:(a) _____ [1]

- (b) Eason drew the net of his cuboid in Figure 2 and it is incorrect. Put a cross 'X' on one face that does not fit the net of his cuboid.

Figure 2



- (c) Find the perimeter of the correct net of his cuboid.

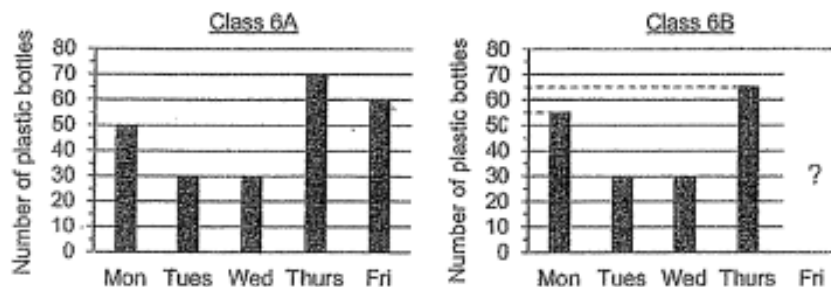
[1]

Ans:(c) _____ [2]

- (d) Find the maximum number of 4-cm cubes that can be fitted into his cuboid?

Ans:(d) _____ [1]

- 12 The bar graphs below show the number of plastic bottles collected by two classes, 6A and 6B, for the week from Monday to Friday. The bar for the number of plastic bottles collected by Class 6B on Friday has not been drawn.



- (a) The number of plastic bottles collected by Class 6B on Friday was $\frac{1}{5}$ the number of plastic bottles collected by the class for the week. How many plastic bottles did Class 6B collect on Friday?

Ans:(a) _____ [2]

- (b) Find the difference in the total number of plastic bottles collected by the two classes over the week.

Ans:(b) _____ [2]

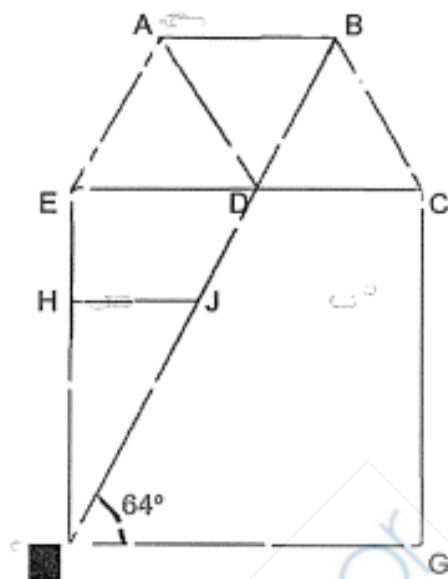
- (c) Stephan drew a pie chart to represent the number of plastic bottles collected over the week by one of the classes, 6A or 6B. However, he had forgotten to label the information in his pie chart.



Which class, 6A or 6B, does the pie chart represent?

Ans:(c) _____ [1]

- 13 In the figure below, ABCD and ABDE are rhombuses. CEFG is a square and $\angle DFG = 64^\circ$.



- (a) Find $\angle CDF$.

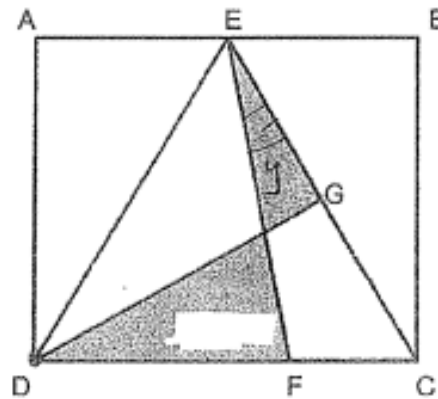
Ans:(a) _____ [1]

- (b) The figure above is not drawn to scale. Each statement below is either true, false or not possible to tell from the information given above. For each statement, put a tick (\checkmark) to indicate your answer.

Statement	True	False	Not possible to tell
AE is parallel to DF.			
EDJH is a trapezium.			
ABD is an equilateral triangle.			

[2]

- 14 ABCD is a rectangle with an area of 168 cm^2 . The length of DF is twice that of FC. G is the midpoint of EC.



- (a) Find the area of triangle EDC.

Ans:(a) _____ [1]

- (b) Find the difference in the area between the 2 shaded parts.

Ans:(b) _____ [3]

- 15 Mindy wanted to buy 36 identical pens with her money but she was short of \$7.80. She decided to spend $\frac{4}{7}$ of her money on 15 identical pens and $\frac{1}{2}$ of the remaining money on a ruler.

(a) What fraction of her money did she spend on the ruler?

Ans:(a) _____ [1]

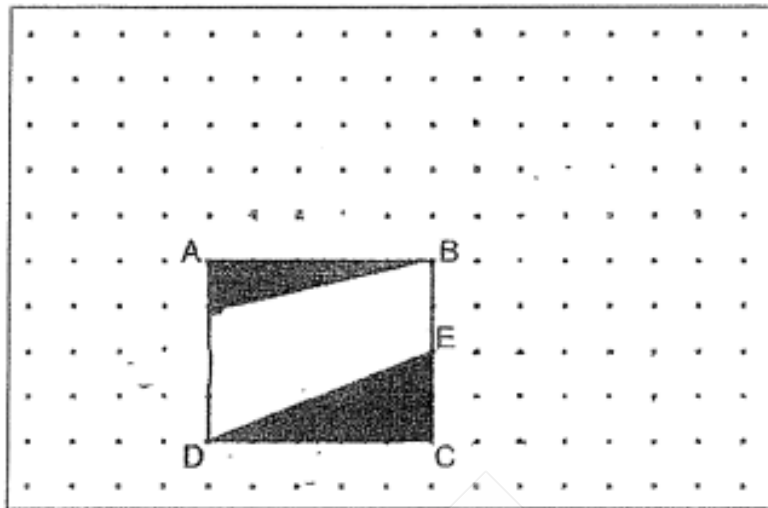
(b) Find the cost of each pen.

Ans:(b) _____ [2]

(c) How much did Mindy have at first?

Ans:(c) _____ [2]

- 16 A rectangle ABCD is drawn on a square grid inside a box. Part of the rectangle is shaded as shown below.



- (a) What is the ratio of the length AB to the perimeter of rectangle ABCD?

Ans:(a) _____ [1]

- (b) What percentage of the rectangle ABCD is shaded?

Ans:(b) _____ [1]

- (c) By joining dots on the grid with straight lines, draw triangle ABX such that the ratio of the area of triangle ABX to the area of rectangle ABCD is 1 : 4 and $\angle XAB$ is an obtuse angle. Triangle ABX must not overlap with rectangle ABCD.

[1]

- (d) By joining dots on the grid with straight lines, draw a trapezium DEFG such that the ratio of the area of triangle CDE to the area of trapezium DEFG is 1 : 3. Trapezium DEFG must not overlap with trapezium ABED.

[1]

- 17 Shaun drew a three-quarter circle as shown in Figure 1 below. He then cut the three-quarter circle into 3 identical quadrants and arranged them as shown in Figure 2. The perimeter of Figure 2 is 12 cm longer than the perimeter of Figure 1. (Take $\pi = 3.14$)

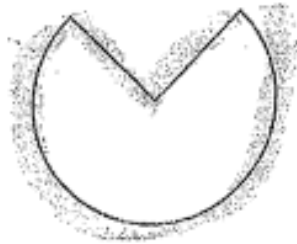


Figure 1



Figure 2

- (a) Find the perimeter of Figure 1.

Ans:(a) _____ [2]

- (b) Find the area of Figure 2.

Ans:(b) _____ [2]

END OF PAPER

Answer Sheet




PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	3	3	2	2	1	4	1	2

Q 11	Q12	Q13	Q14	Q15
2	1	1	4	2

PAPER 1 BOOKLET B

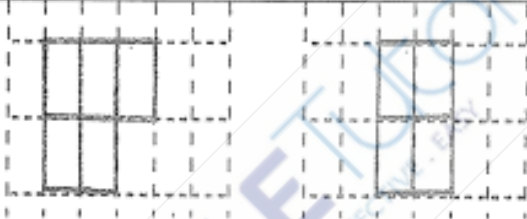
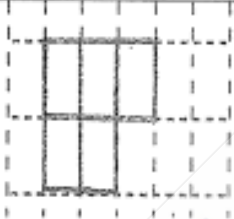

Q16)	$30 - 8 + 16 \div 4 + 2$ $= 30 - 8 + 4 + 2$ $= 22 + 4 + 2$ $= 28$
Q17	130°
Q18	$\frac{17 + 28}{2} = 22.5$
Q19	3
Q20	
Q21	$2\frac{1}{3} \div \frac{1}{6} = \frac{7}{3} \times \frac{6}{1}$ $= \frac{42}{3}$ $= 14$
Q22	$8.08 \div 40$

	$= 8.08 \div 4 \div 10$ $= 2.02 \div 10$ $= 0.202$
Q23	$\frac{36}{4} = 9$ $9 \times 9 =$ 81cm^2
Q24	a) Prism b) 2 Triangular faces and 3 rectangular faces
Q25	$\angle a = 180^\circ - 90^\circ - 55^\circ = 35$ $\angle x = 360^\circ - 35^\circ$ $= 325^\circ$
Q26	$80 - 48 = 32$
Q27	April
Q28	$25 \times 3 = 75$ $75 - 15 = 60$ $60 - 9 = 51$ <div style="text-align: center;"> $\swarrow \quad \searrow$ 21 30 </div> $30 + 9 = 39$
Q29	a) $90\text{min} = 1\text{hour } 30\text{ mins} = 1\frac{1}{2}\text{ hours}$ $20 \times 1\frac{1}{2} = 30$ 30km b) Ken was cycling slower than Josh. Working: $50 - 30 = 20$
Q30	$20 \times n = 20n$ $20n = 4\text{box}$ $1\text{ box} = 20n \div 4$ $= 5n$

PAPER 2

Q1	a) $1786 = 893 \times 2$ Answer = 1786 b) 7861
Q2	$4U + 40 = 3U + 48$

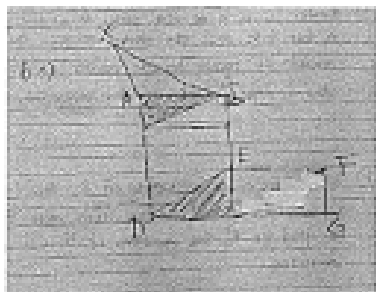
	$4U - 3U = 48 - 40$ $= 8$
Q3	$6b + 16 \times 4 = 112$ $6b = 112 - 64 = 48$ $b = 48 \div 6 = 8$ $8 \times 4 = 32$ $32 + 16 + 16 = 64$ ans: 64cm
Q4	$240\text{cm} = 2.4\text{m}$ $11/(2.4) \approx 4$ $4 \times w = 4w$
Q5	<p>a) Ali is seated west of Bala</p> <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">Ali</div> </div> <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">Ali</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">Ali</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">Ali</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <p>b)</p>
Q6	<p>a) $\frac{1}{2} - \frac{2}{5} = \frac{1}{10}$ $1U = 200$ $10U = 200 \times 10 = 2000\text{cm}^3$</p> <p>b) $\frac{300}{2400} \times 100 = 12.5\%$</p>
Q7	<p>a) $\frac{180}{10} = 18$ $18 - 12 = 6$ $4U - 1U = 3U$ $3U = 6$ $1U = \frac{6}{3} = 2$ Answer: 2</p> <p>b) \$2: $2 \times 4 = 8$ & $8 \times 2 = 16$</p> <p>\$10 = $180 + 2 \times 10 = 200$</p> <p>$200 + 16 = 216$</p>

Q8	<p>a) $16U - 15U = 1U$ $1U = 9$ $6U = 9 \times 6 = 54$</p> <p>b) $\frac{144-9}{5} = 27$ Answer: 27</p>
Q9	<p>$100U - 60U - 39U = 5U$ $5U = 70$ $1U = \frac{70}{5} = 14$ $60 \times 14 = 840$</p> <p>$\frac{35 \times 14}{2} = 245$ $245 + 840 = 1085$ $\frac{6510}{1085} = 6$</p>
Q10	 <p>a) </p> <p>b) $1+4+3=8$</p>
Q11	<p>a) $6 \times 20 \times 4 = 480 \text{ cm}^3$</p>  <p>b) $4+20+4=28$ $20 \times 2=40$ $28 \times 2=56$ $56+40=96 \text{ cm}$ $(20+4+6+4+4+6+4) \times 2=96 \text{ cm}$</p> <p>d) $20 \div 4=5$ $4 \div 4=1$ $6 \div 4=1 \text{ r}^2$ $5 \times 1 \times 1=5$</p>
Q12	<p>a) $\frac{55+30+30+65}{4} = 45$</p>

	<p>b) $50 + 30 + 30 + 70 + 60 = 240$ $45 \times 5 = 225$ $240 - 225 = 15$</p> <p>c) 6A</p> <p>Working:</p> <p>$A = \frac{240}{4} = 60$ (correct)</p> <p>$B = \frac{225}{4} = 56.25$ (wrong)</p>
Q13	<p>a) $\angle CDF = 180^\circ - 64^\circ = 116^\circ$</p> <p>b) AE is parallel to DF = False EDJH is a trapezium = Not possible to tell ABD is an equilateral triangle = True</p>
Q14	<p>a) $\frac{168}{2} = 84 \text{ cm}^2$</p> <p>b) $\frac{84}{2} = 42$ $\frac{84}{3} \times 2 = 56$ $56 - 42 = 14 \text{ cm}^2$</p>
Q15	<p>a) $\frac{3}{14}$</p> <p>b) $15P = \frac{4}{7} \text{ money}$ $1P = \frac{4}{7} \div 15 = \frac{4}{105} \text{ Money}$ $36P = \frac{4}{105} \times 36 = 1 \frac{13}{35}$ $13U = 7.8$ $35u = \frac{7.8}{13} \times 35 = 21$ $21 \div 7 \times 4 = 12$ $\frac{12}{15} = 0.8$ $\\$0.80$</p> <p>c) $\frac{12}{8} \times 14 = 21$ $\\$21$</p>
Q16	<p>a) $5 + 5 + 4 + 4 = 18$ Ans: 5:18</p> <p>b) $5 \times 4 = 20$ $\frac{1}{2} \times 5 \times 1 = 2.5$ $\frac{1}{2} \times 2 \times 5 = 5$ $\frac{2.5 + 5}{20} \times 100 = 37.5$ 37.5%</p>

c) .

d) .



Q17

a) $\frac{12}{2} = 6$

$d = 6 \times 2 = 12$

$12 \times 3.14 \times \frac{3}{4} = 28.26$

$28.26 + 12 = 40.26$

40.26cm

b) $6 \times 6 \times 3.14 \times \frac{3}{4} = 84.78$

84.78cm^2

ROSYTH SCHOOL PRELIM PAPER

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

All diagrams in this paper are not drawn to scale unless stated otherwise.

(20 marks)

1. Round off 299.996 to 2 decimal places.

- (1) 299.97
- (2) 299.99
- (3) 300.00
- (4) 300.09

2. Express $8 + 4y - (6 + 2) - 2y$ in the simplest form.

- (1) $6y + 5$
- (2) $6y + 1$
- (3) $2y + 5$
- (4) $2y + 1$

3. Which of the following is the same as 9p70 mℓ ?

- (1) 9 ℓ 7 mℓ
- (2) 9 ℓ 70 mℓ
- (3) 90 ℓ 7 mℓ
- (4) 90 ℓ 70 mℓ

Study the bar graphs and answer questions 4 and 5.

Ms Noraini baked some buns to sell. Figure 1 shows the number of buns that she baked. Figure 2 shows the number of buns that were left unsold.

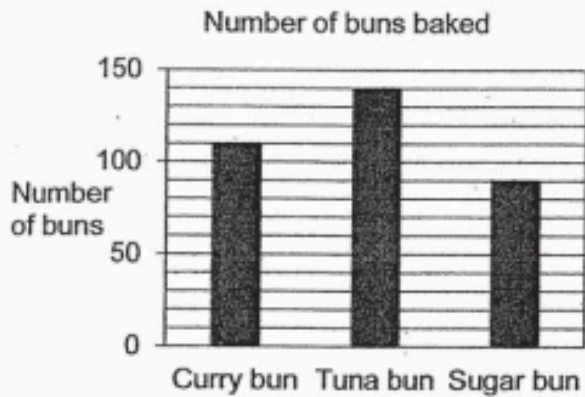


Figure 1

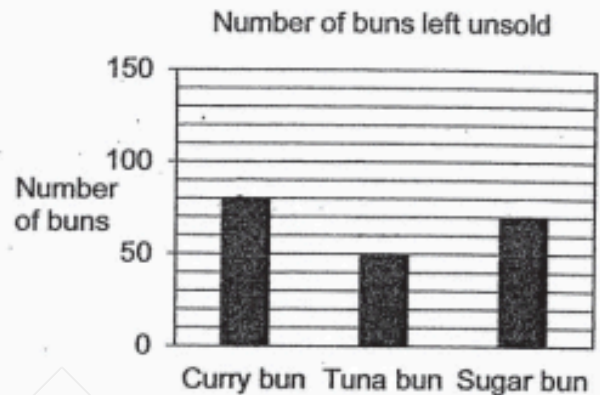


Figure 2

4. How many curry buns and sugar buns did Ms Noraini bake altogether?

- (1) 150
- (2) 200
- (3) 340
- (4) 350

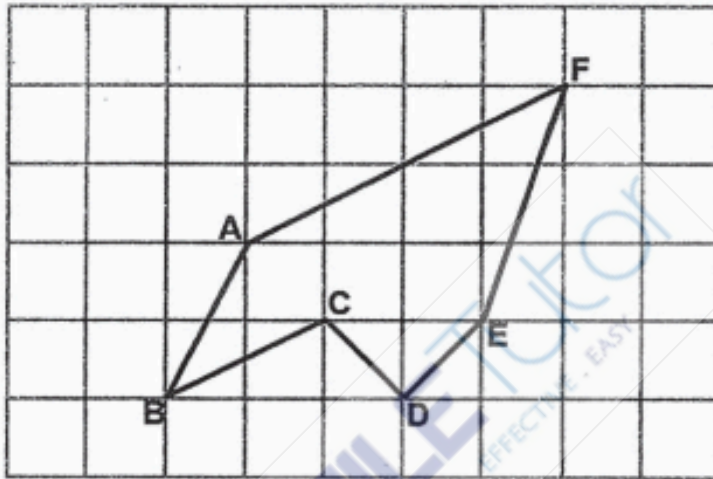
5. How many tuna buns did Ms Noraini sell?

- (1) 20
- (2) 30
- (3) 50
- (4) 90

6. The National Day Parade started at 5.55 p.m. and ended at 8.15 p.m. How long was the National Day Parade? Give your answer in hours and minutes.

- (1) 2 h 10 min
- (2) 2 h 20 min
- (3) 3 h 10 min
- (4) 3 h 20 min

7. Which pair of lines are parallel?

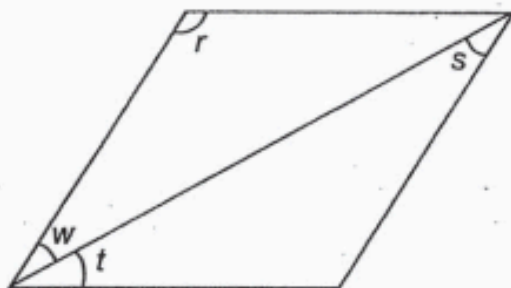


- (1) AB and EF
- (2) CD and DE
- (3) BC and DE
- (4) AF and BC

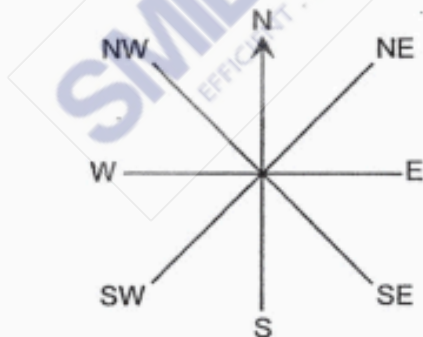
8. Ali took part in a race. He ran for 3 km and cycled for 9 km. He took a total time of 120 min. What was his average speed for the race?

- (1) 6 km/h
- (2) 7.2 km/h
- (3) 10 km/h
- (4) 24 km/h

9. Which statement about the rhombus is false?

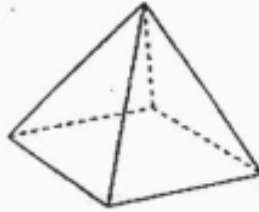


- (1) $\angle w = \angle t$
 - (2) $\angle t + \angle w = 180^\circ - \angle r$
 - (3) $\angle r + \angle s + \angle w = 180^\circ$
 - (4) $\angle s + \angle t + \angle w = 180^\circ$
10. The figure shows an 8-point compass. Vishal was facing south-east (SE) at first. He turned 135° anticlockwise. Which direction does he face now?

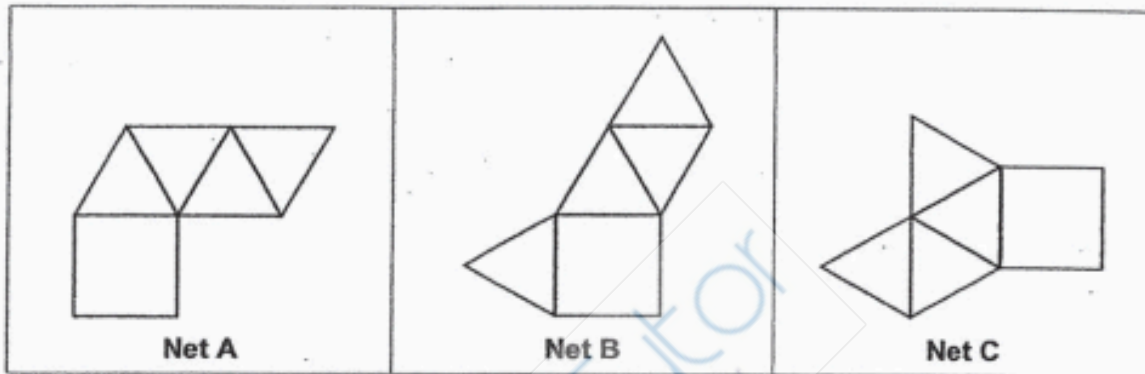


- (1) North (N)
- (2) South (S)
- (3) East (E)
- (4) West (W)

11. The figure shows a pyramid.



Which of the following are possible nets of the pyramid?

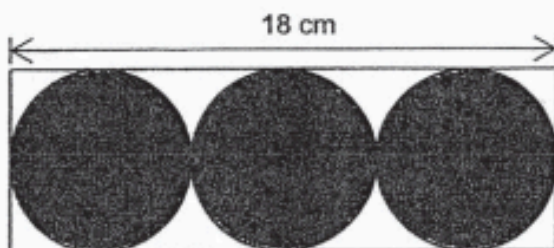


- (1) Net A and Net B
- (2) Net A and Net C
- (3) Net B and Net C
- (4) Net A, Net B and Net C

12. A shop gave a discount of \$0.30 for every \$2 spent. Paul paid \$8.50 for a file after discount. What was the price of the file before the discount?

- (1) \$9.70
- (2) \$9.40
- (3) \$9.10
- (4) \$8.80

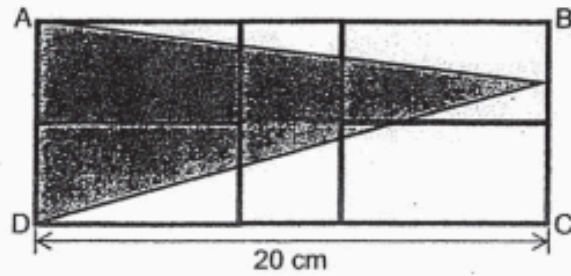
13. The figure below is formed by 3 identical shaded circles and a rectangle. The length of the rectangle is 18 cm. Find the total area of the 3 shaded circles. Give your answer in terms of π .



- (1) $9\pi \text{ cm}^2$
 (2) $27\pi \text{ cm}^2$
 (3) $36\pi \text{ cm}^2$
 (4) $108\pi \text{ cm}^2$
14. Sam has a 30 cm paper strip. He cuts it into 4 pieces.
 The length of the first piece is 1 cm less than the length of the second piece.
 The length of the second piece is 1 cm less than the length of the third piece.
 The length of the last piece is 3 cm longer than the length of the first piece.
 Find the length of the shortest piece as a fraction of the length of the original strip.

- (1) $\frac{1}{5}$
 (2) $\frac{1}{4}$
 (3) $\frac{3}{10}$
 (4) $\frac{3}{7}$

15. The figure below is made up of 5 identical rectangles. The length of the big rectangle ABCD is 20 cm. Find the area of the shaded triangle.



- (1) 5 cm^2
- (2) 80 cm^2
- (3) 100 cm^2
- (4) 160 cm^2



Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

All diagrams in this paper are not drawn to scale unless stated otherwise.

(5 marks)

16. Find the value of $7 \times 2 + (25 - 10) \div 5$

Ans: _____

17. What is the percentage discount for the item shown below?

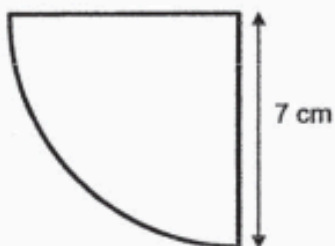


Ans: _____ %

18. Find the average of 5, 11 and 23.

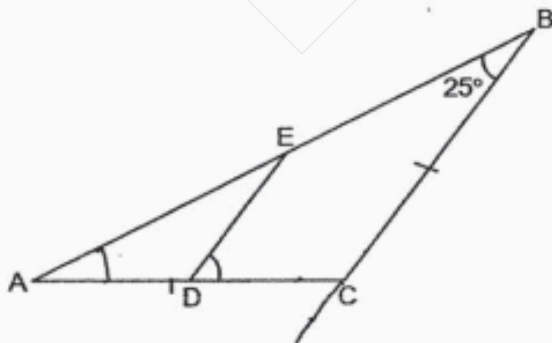
Ans: _____

19. The figure below shows a quadrant with radius 7 cm. What is the perimeter of the quadrant? (Take $\pi = \frac{22}{7}$)



Ans: _____ cm

20. ABC is an isosceles triangle, where $AC = BC$ and $ED \parallel BC$. Find $\angle EDC$.



Ans: _____ °

Questions 21 to 30 carry 2 marks each. Show your workings clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

All diagrams in this paper are not drawn to scale unless stated otherwise.

(20 marks)

21. B is a whole number that lies between 40 and 50. It has an odd number of factors. Find the number B.

Ans: _____

22. Find the value of the following when $m = 5$. Leave your answer in the simplest form.

(a) $3m - 3$

Ans: a) _____

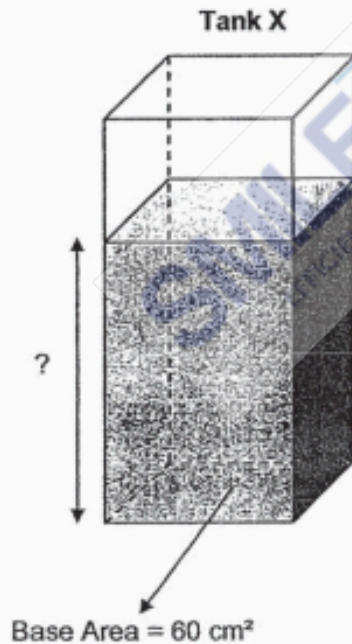
(b) $2m - \frac{m}{2}^5$

Ans: b) _____

23. Mary is 16 years old now. Her father is thrice as old as her a year ago. How old is her father now?

Ans: _____

24. Tank X contained some water. The base area of the tank is 60 cm^2 . The volume of water in the container is 1020 ml. What is the height of the water level in the tank?



Ans: _____ cm

25. The scores of all the children who participated in a game were recorded. The table shows the number of children with the following scores.

Score	10	15	20	25	30	35	40
Number of children	2	7	8	9	6	5	3

A higher score means a better performance. The prize table for their performance is shown below.

Prize	Condition
Medal	Score at least 30 points.
Sticker	Score above 15 points.

Each of the statement is either true, false or not possible to tell from the information given above. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
40 children participated in the game.			
Medals were given to 20% of the children.			
17 children won only stickers.			

26. The table below shows the rental cost of booking a badminton court.

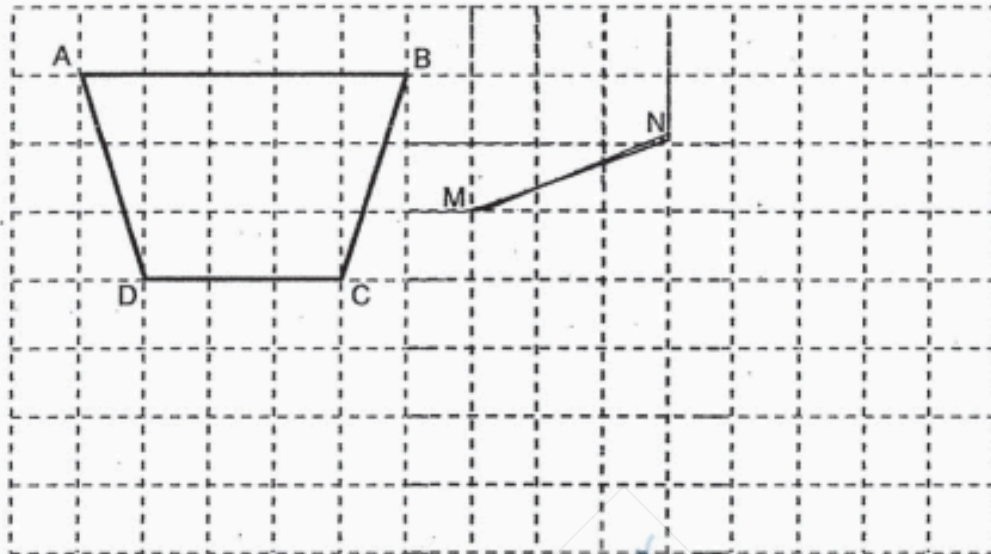
Day	Cost of rental per hour
Weekdays	\$3
Weekends	\$5

Lily spent a total of \$42 to book the badminton court for 4 hours on Tuesday and a number of hours on Saturday.

How long did she book the badminton court on Saturday?

Ans: _____ h

27. A trapezium ABCD is drawn on a square grid.

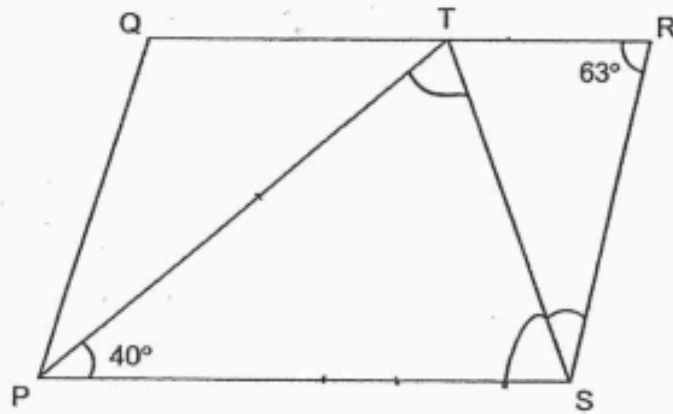


a) Using the line MN, draw a parallelogram MNPQ such that it has the same perimeter as ABCD.

b) Find the ratio of the area of ABCD to the area of MNPQ.

Ans: b) _____

28. In the figure below, PTRS is a trapezium.
 QTR is a straight line and $PT = PS$. Find $\angle RST$.



Ans: _____°

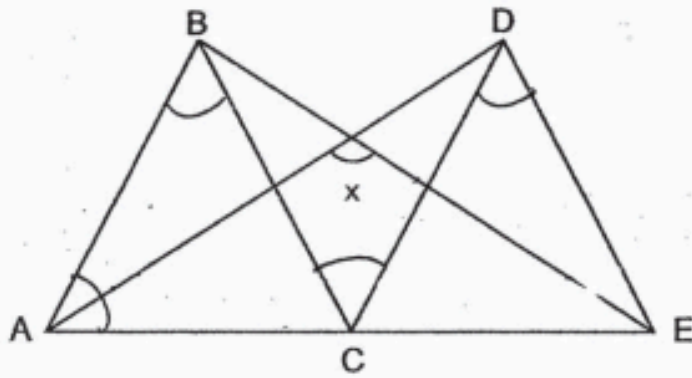
29. The table below shows the sum of the numbers in each row.

Row	Sum of numbers
1	1
2	$2 + 3 + 4$
3	$3 + 4 + 5 + 6 + 7$
4	$4 + 5 + 6 + 7 + 8 + 9 + 10$

Find the sum of all the numbers in row 6.

Ans: _____

30. The figure shows two identical equilateral triangles, ABC and CDE . AD , BE and AE are straight lines. Find $\angle x$.



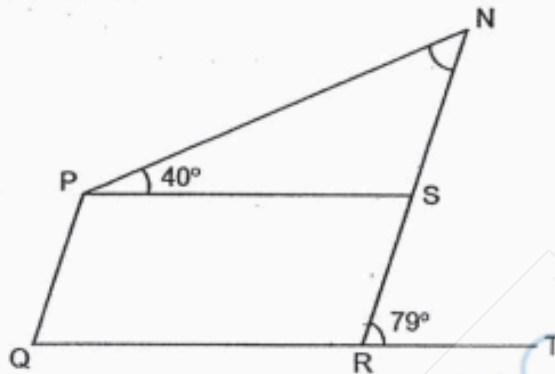
Ans: _____

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

All diagrams in this paper are not drawn to scale unless stated otherwise.

1. In the figure below, PQRS is a parallelogram. RSN and QRT are straight lines. Find $\angle SNP$.



Ans: _____°

2. Three children shared 34 marbles. Kate has p marbles. Nigel has 11 more marbles than Kate. Rizal has 6 marbles less than Nigel. Find the value of p .

Ans: _____

3. A rectangle is first divided into two equal parts. The left half is divided into 5 equal parts while the right half is divided into 2 equal parts.



The total area of the shaded parts is 176 cm^2 . What is the area of the rectangle?

Ans: _____ cm^2

4. Mr Tan started cycling from home to work at 450 m/min for 30 minutes. His wife, Mrs Tan, started cycling from home 5 minutes before Mr Tan and reached the same work place 5 minutes after Mr Tan. They travelled the same distance. Find Mrs Tan's cycling speed.

Ans: _____ m/min

5. Students in a hall were lining up in rows. Each row had the same number of students. Jeremy was in one of the rows. There were 7 students to his right and 7 students to his left. There were 21 rows of students in front of him and 21 rows of students behind him. How many students were there in the hall?



Ans: _____

For Questions 6 to 17, show your working clearly in the space provided for each question and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. For questions which require units, give your answers in the units stated. (45 marks)

All diagrams in this paper are not drawn to scale unless stated otherwise.

6. A class of 25 students were each offered a box of donuts to sell during a fun fair. 3 of the students could not sell any of the donuts so they passed their boxes of donuts to the rest of the classmates to sell. As a result, each of the remaining students had to sell 6 more donuts. How many donuts were there in each box at first?

Ans: _____ [3]

7. Container A, B and C had a total of 9894 tokens.

$\frac{1}{5}$ of the tokens in A were transferred into B. $\frac{3}{8}$ of the tokens in A were transferred into C. After that, the 3 containers had an equal number of tokens.

(a) How many tokens were there in each container at the end?

Ans: (a) _____ [1]

(b) What was the number of tokens in Container B at first?

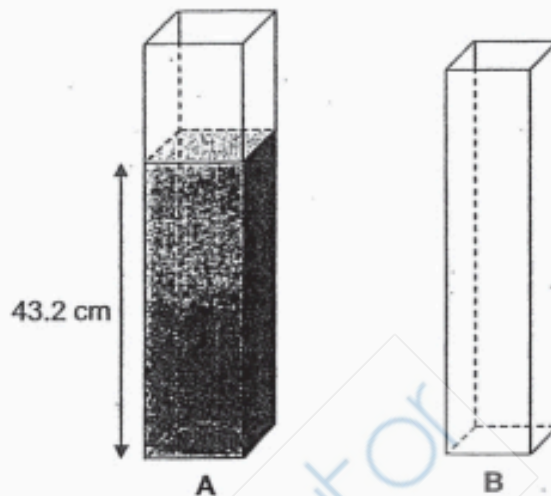
Ans: (b) _____ [2]

8. Ryan and Aqil had 352 stickers altogether. After Ryan lost 25% of his stickers, the ratio of Ryan's stickers to Aqil's stickers was 9 : 4. How many stickers did Aqil have?

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Ans: _____ [3]

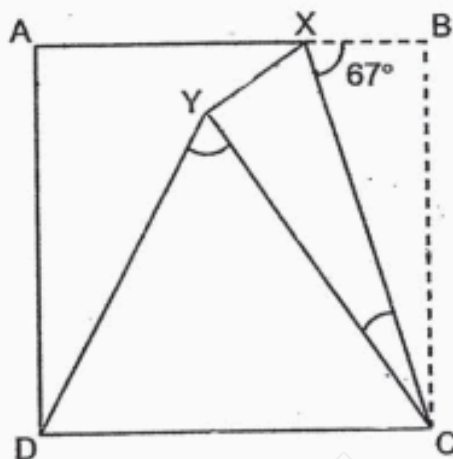
9. A and B are two rectangular containers. The base area of A is 50 cm^2 while the base area of B is 40 cm^2 . Container A contained some water and the height of the water level in Container A was 43.2 cm as shown below. Container B was empty at first.



Selina then poured some water from Container A into Container B. After that, the height of the water level in both containers became the same. What was the height of the water level in the end?

Ans: _____ [3]

10. ABCD is a square piece of paper. The paper is folded along the line CX such that point B touches point Y.



- (a) Find $\angle XCY$.

Ans: (a) _____ [1]

- (b) Find $\angle CYD$.

Ans: (b) _____ [2]

11. Imran pasted three rectangular strips of the same size together to form a big rectangle, as shown in Figure 1 below.

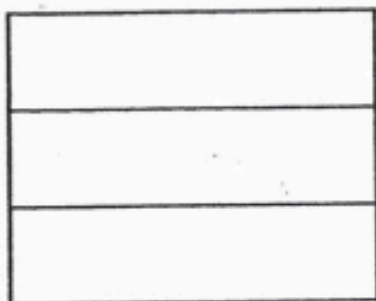


Figure 1

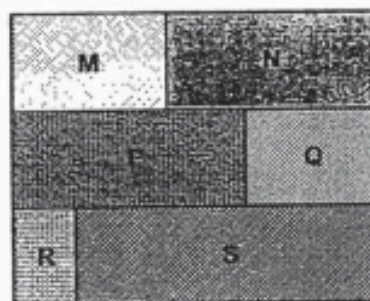


Figure 2

Imran then divided the big rectangle into 6 parts and labelled them M, N, P, Q, R and S, as shown in Figure 2. The ratio of the area of M to the area of N to the area of P is $5 : 7 : 8$. The ratio of the area of Q to the area of R to the area of S is $2 : 1 : 5$. The area of N is bigger than the area of Q by 291 cm^2 .

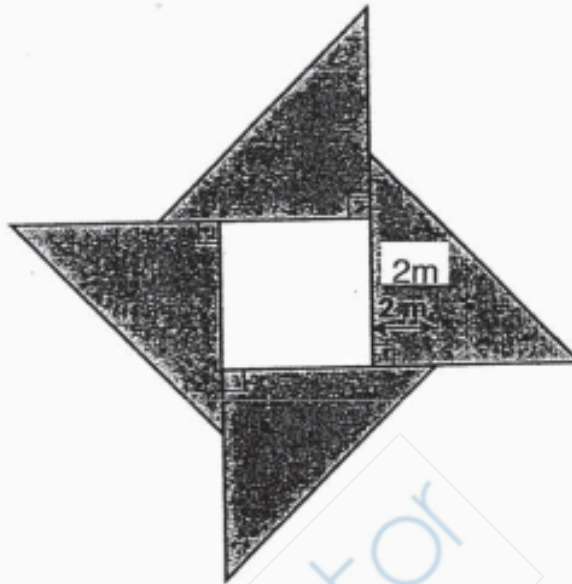
- (a) What is the ratio of the area of N to the area of S?

Ans: (a) _____ [2]

- (b) Find the area of the big rectangle.

Ans: (b) _____ [2]

12. The figure below is formed by 4 identical right-angled isosceles triangles and a square in the centre. The shaded area of the figure is 200 m^2 . Find the perimeter of the square.

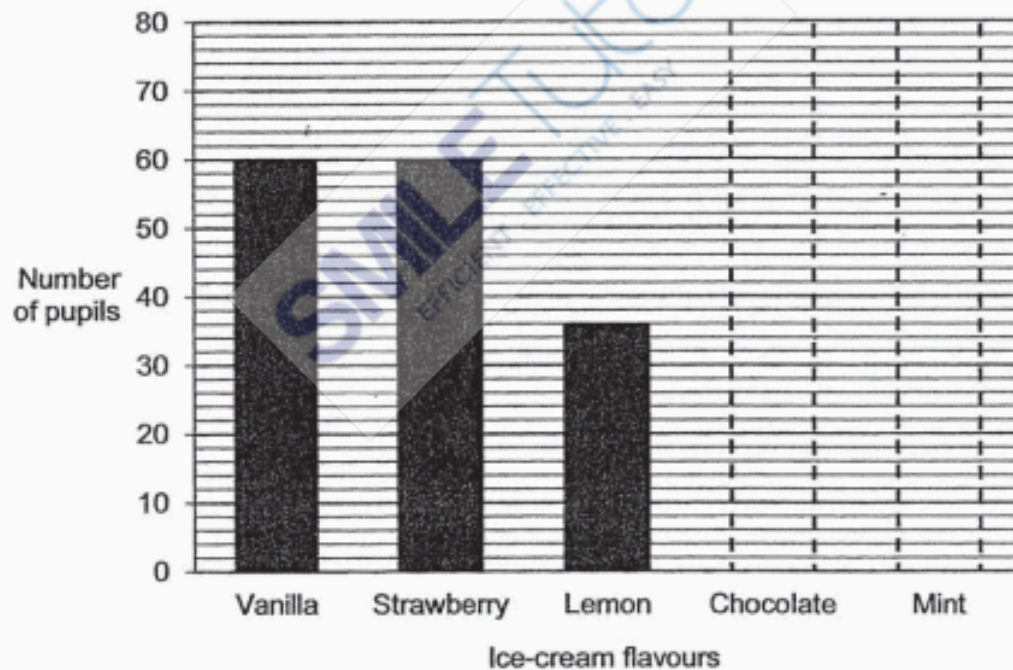


Ans: _____ [4]

13. The pie chart shows the different flavours of ice-cream that the Primary 6 pupils had chosen.



The number of pupils who have chosen each ice-cream flavour is also represented by the bar graph below. The bars for the number of pupils who chose Chocolate and Mint have not been drawn.

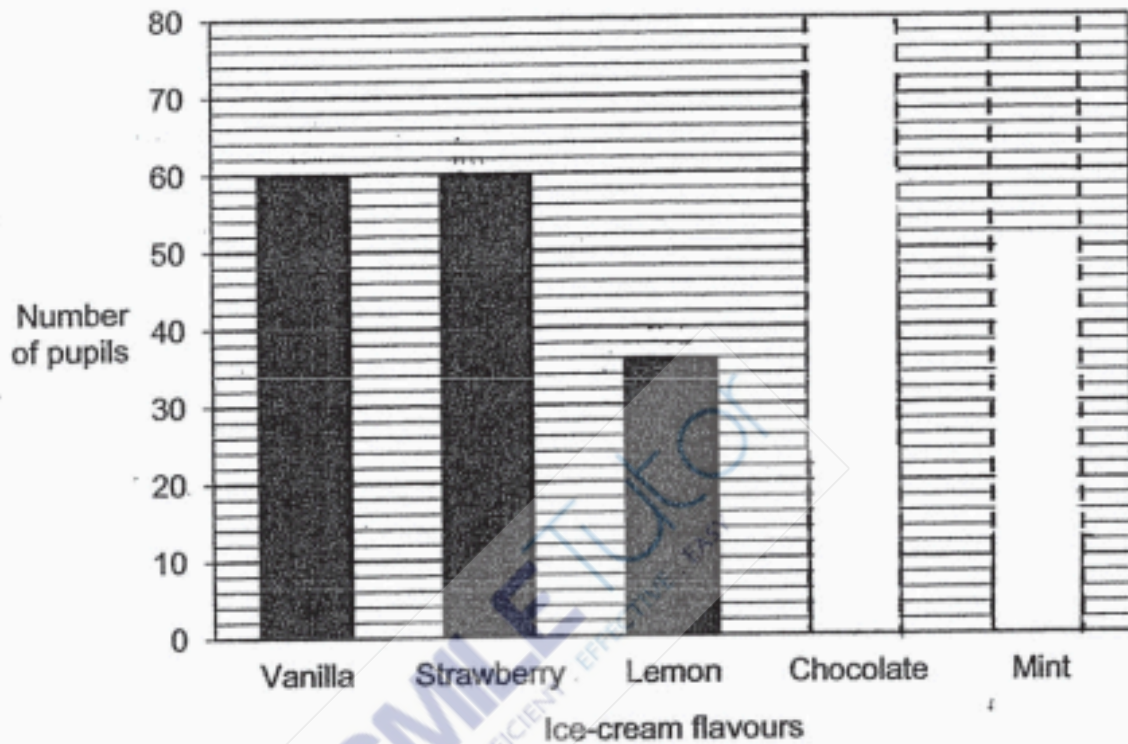


- (a) How many Primary 6 pupils are there?

Ans: (a) _____ [1]

Continue with part (b) on the next page.

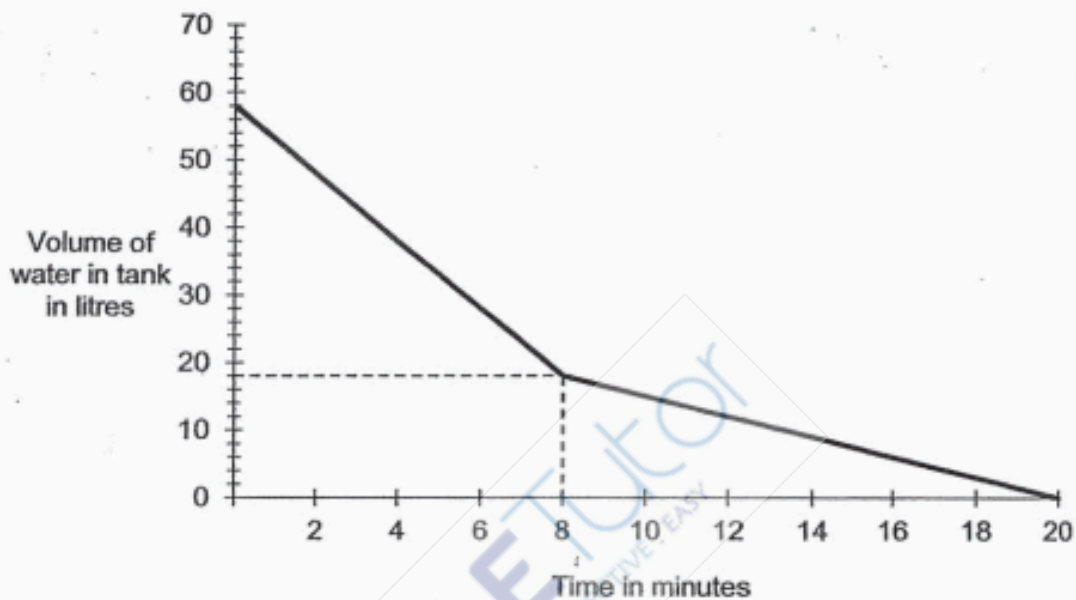
- (b) The number of pupils who chose Chocolate ice-cream is six times the number of pupils who chose Mint ice-cream. Draw the bars for the number of pupils who have chosen Chocolate ice-cream and Mint ice-cream in the bar graph below.



[3]

14. A rectangular tank was completely filled with water. Adam turned on Tap D first. Water started flowing out from the tank through Tap D. After 8 minutes, he turned on Tap E, which adds water into the rectangular tank. Both taps were turned off at the same time when the rectangular tank was empty.

The graph below shows the amount of water in the tank for 20 minutes.



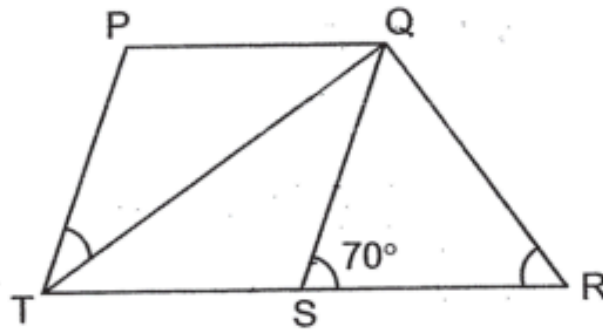
- (a) After Tap D was turned on for 8 minutes, what fraction of the tank was filled with water? Leave your answer in the simplest form.

Ans: (a) _____ [1]

- (b) In one minute, how many litres of water was added by Tap E?

(b) _____ [3]

15. In the figure below, PQST is a rhombus and QRS is a triangle. TSR is a straight line and $TS = SR$.



- (a) Find $\angle QRS$.

Ans: (a) _____ [2]

- (b) Find $\angle PTQ$.

Ans: (b) _____ [2]

16. At a shop, pens were only sold in boxes. A box of 6 ballpoint pens cost \$1.80 and a box of 4 gel pens cost \$6.40.

- (a) Sam spent \$10 to buy both types of pens. Find the least total number of ballpoint pens and gel pens bought by Sam.

Ans: (a) _____ [2]

- (b) Tom bought 22 more gel pens than ballpoint pens. The total number of pens he bought was more than 40 but fewer than 60. How many pens did Tom buy altogether?

Ans: (b) _____ [3]

17. In January, a kindergarten was given a total sum of \$2400. It spent 80% of the sum of money on books and the rest on stationery. In February, the sum given to the kindergarten was increased. It increased its spending on books by \$240. It spent the remaining 20% of the sum given in February on stationery.

(a) How much did the kindergarten spend on stationery in January?

Ans: (a) _____ [2]

(b) What was the percentage increase in the sum of money spent on stationery in February?

Ans: (b) _____ [3]

End of paper
Have you checked your work?

Answer Sheet

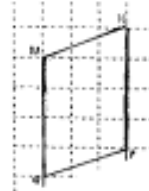


BOOKLET A (PAPER 1)

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	2	2	4	2	4	1	4	1
Q11	Q12	Q13	Q14	Q15					
3	1	2	1	2					

BOOKLET B (PAPER 1)

Q16	$7 \times 2 = 14$ $25 - 10 = 15$ $15 \div 5 = 3$ $14 + 3 = 17$ ANS: 17	Q17	$80 \div 100 = 0.8$ $12 \div 0.8 = 15$ ANS: 15%																
Q18	$5 + 11 + 23 = 39$ $39 \div 3 = 13$ ANS: 13	Q19	$(7+7) \times \frac{22}{7} \times \frac{1}{4} = 11$ $11 + 7 + 7 = 25$ ANS: 25cm																
Q20	50°	Q21	49																
Q22	a) $15 - 3 = 12$ b) $10 - \frac{5}{2} = 7\frac{1}{2}$	Q23	Ago $\rightarrow 16 - 1 = 15$ Father $\rightarrow 15 \times 3 + 1 = 46$ ANS: 46																
Q24	$1020 \div 60 = 17$ ANS: 17cm	Q25	<table border="1"> <thead> <tr> <th>Statement</th><th>True</th><th>False</th><th>Not possible to tell</th></tr> </thead> <tbody> <tr> <td>40 children participated in the game.</td><td>✓</td><td></td><td></td></tr> <tr> <td>Medals were given to 20% of the children.</td><td></td><td>✓</td><td></td></tr> <tr> <td>17 children won only stickers.</td><td>✓</td><td></td><td></td></tr> </tbody> </table>	Statement	True	False	Not possible to tell	40 children participated in the game.	✓			Medals were given to 20% of the children.		✓		17 children won only stickers.	✓		
Statement	True	False	Not possible to tell																
40 children participated in the game.	✓																		
Medals were given to 20% of the children.		✓																	
17 children won only stickers.	✓																		

Q26	<p>Tues $\rightarrow 3 \times 4 = 12$ Left $\rightarrow 42 - 12 = 30$ Sat $\rightarrow 30 \div 5 = 6$ ANS : 6h</p>	Q27	<p>a)</p>  <p>b) $ABCD = 12u$ $MNPQ = 12u$ $ABCD : MNPQ$ $12 \div 12 = 1 : 1$</p>
Q28	<p>$\angle PST \rightarrow (180 - 40) \div 2 = 70$ $\angle RST \rightarrow 180 - 70 - 63 = 47$ ANS : 47°</p>	Q29	<p>$15 + 15 + 25 + 11 + 30 + 25 = 121$ ANS : 121</p>
Q30	<p>$\angle BEA \rightarrow 60 \div 2 = 30$ $\angle X \rightarrow 180 - 30 - 30 = 120$ ANS : 120°</p>		

PAPER 2

Q1	<p>$\angle QRS \rightarrow 180 - 79 = 101$ $\angle PSR \rightarrow 180 - 101 = 79$ $\angle NSP \rightarrow 180 - 79 = 101$ $\angle PNS \rightarrow 180 - 101 - 40 = 39$ ANS : 39°</p>	Q2	<p>$3p \rightarrow 34 - 11 - 5 = 18$ $p \rightarrow 18 \div 3 = 6$ ANS : 6</p>
Q3	<p>$\frac{1}{20} \rightarrow 176 \div 11 = 16$ $20u \rightarrow 16 \times 20 = 320$ ANS : $320cm^2$</p>	Q4	<p>Total distance $\rightarrow 450 \times 30 = 13500$ Mrs Tan $\rightarrow 10min$ longer Mrs Tan speed $\rightarrow 13500 \div 40 = 337.5$ ANS : $33.75m/min$</p>
Q5	<p>Total rows $\rightarrow 21 + 21 + 1 = 43$ Students $\rightarrow 43 \times 15 = 645$</p>	Q6	<p>Left $\rightarrow 25 - 3 = 22$ Extra $\rightarrow 22 \times 6 = 132$ 1 box $\rightarrow 132 \div 3 = 44$ ANS : 44</p>
Q7	<p>a) 1 container $\rightarrow 9894 \div 3 = 3298$ ANS : 3298 b) $\frac{1}{40} \rightarrow 3298 \div 17 = 194$ Extra B $\rightarrow 194 \times 8 = 1552$ B $\rightarrow 3298 - 1552 = 1746$ ANS : 1746</p>	Q8	<p>$1u \rightarrow 352 \div 16 = 22$ A $\rightarrow 22 \times 4 = 88$ ANS : 88</p>

Q9	Volume $\rightarrow 43.2 \times 50 = 2160$ 1cm for A $\rightarrow 50\text{cm}^3$ 1cm for B $\rightarrow 40\text{cm}^3$ 1cm for both $\rightarrow 40 + 50 = 90$ Height $\rightarrow 2160 \div 90 = 24$ ANS : 24cm	Q10	a) $\angle XCY \rightarrow 180 - 90 - 67 = 23$ ANS : 23° b) $\angle YCD \rightarrow 90 - 23 - 23 = 44$ $\angle CYD \rightarrow (180 - 44) \div 2 = 68$ ANS : 68°
Q11	a) 7 : 10 b) $1u \rightarrow 291 \div 3 = 97$ Total area $\rightarrow 97 \times 36 = 3492$ ANS: 3492cm^2	Q12	1 big square $\rightarrow 100\text{cm}^2$ Length of $\Delta \rightarrow \sqrt{100}$ Perimeter of the square $\rightarrow (10 - 2) \times 4 = 32$ ANS : 32cm
Q13	a) Pupils $\rightarrow 60 \times 4 = 240$ b) $V + S + L \rightarrow 60 + 60 + 36 = 156$ $7u \rightarrow 240 - 156 = 84$ $1u \rightarrow 84 \div 7 = 12$ Choc $\rightarrow 12 \times 6 = 72$	Q14	a) $\frac{18}{58} = \frac{9}{29}$ b) D drain after $\rightarrow 18 \div 12 = 1.5\text{ℓ per min}$ $E \rightarrow 5 - 1.5 = 3.5$ ANS : 3.5ℓ
Q15	a) $\angle QRS \rightarrow (180 - 70) \div 2 = 55^\circ$ b) $\angle PTQ \rightarrow 70 \div 2 = 35^\circ$	Q16	a) 4 gels after $\rightarrow 10 - 6.4 = 3.6$ Pacts $\rightarrow 3.6 \div 1.8 = 2$ Pens $\rightarrow 6 + 6 + 4 = 16$ ANS : 16 b) 10 box of gel pens $\rightarrow 4 \times 10 = 40$ No of ball pens $\rightarrow 40 - 22 = 18$ Total pens $\rightarrow 40 + 18 = 58$ ANS : 58
Q17	a) $10\% \rightarrow 2400 \div 10 = 240$ Stationery $\rightarrow 240 \times 2 = 480$ ANS : \$480 b) Feb \rightarrow Books : 80% $1920 + 240 = 2160$ Stationery : 20% $\frac{2160}{4} = 540$ $\% \text{ increase} \rightarrow \frac{60}{480} \times 100$ $= 12.5$ ANS : 12.5%		

SINGAPORE CHINESE GIRLS' SCHOOL PRELIM PAPER



Booklet A

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.
(20 marks)

1. 3 thousands, 57 tens, and 3 ones is _____.

- (1) 3060
- (2) 3573
- (3) 8703
- (4) 35 703

2. Which of the following is equivalent to $2\frac{5}{6}$?

- (1) $\frac{7}{6}$
- (2) $\frac{13}{6}$
- (3) $\frac{17}{6}$
- (4) $\frac{32}{6}$

3. In 5279, what does the digit 7 stand for?

- (1) 7 tens
- (2) 7 ones
- (3) 7 tenths
- (4) 7 hundredths

4. Which of the following when divided by 6 gives a quotient of 3 and a remainder of 2?

- (1) 6
- (2) 9
- (3) 15
- (4) 20

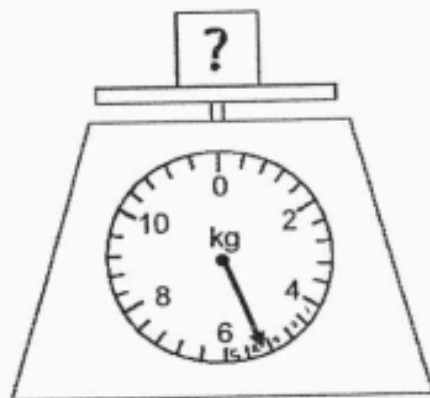
5. Arrange the following numbers in ascending order.

2.10 2.01 2.21

- (1) 2.01 , 2.1 , 2.21
- (2) 2.1 , 2.01 , 2.21
- (3) 2.1 , 2.21 , 2.01
- (4) 2.21 , 2.1 , 2.01

6. What is the closest estimation of the reading shown?

- (1) 4750 g
- (2) 5225 g
- (3) 5500 g
- (4) 5750g



7. Peter had 15 sweets and 9 chocolates. What fraction of the snacks Peter had are chocolates?

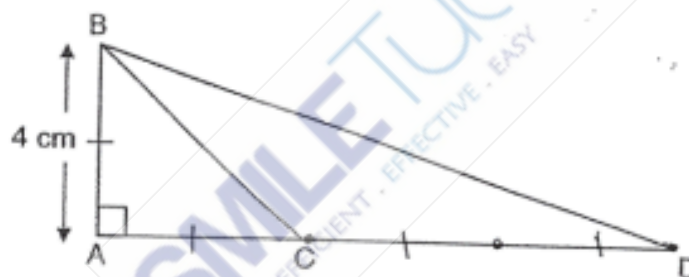
(1) $\frac{2}{3}$

(2) $\frac{3}{5}$

(3) $\frac{3}{8}$

(4) $\frac{5}{8}$

8. In the figure below, the length of AD is thrice of AC. Find the area of triangle BCD.



(1) 16 cm^2

(2) 24 cm^2

(3) 32 cm^2

(4) 48 cm^2

9. Find the value of $\frac{5w}{2} - w + 2$ when $w = 10$.

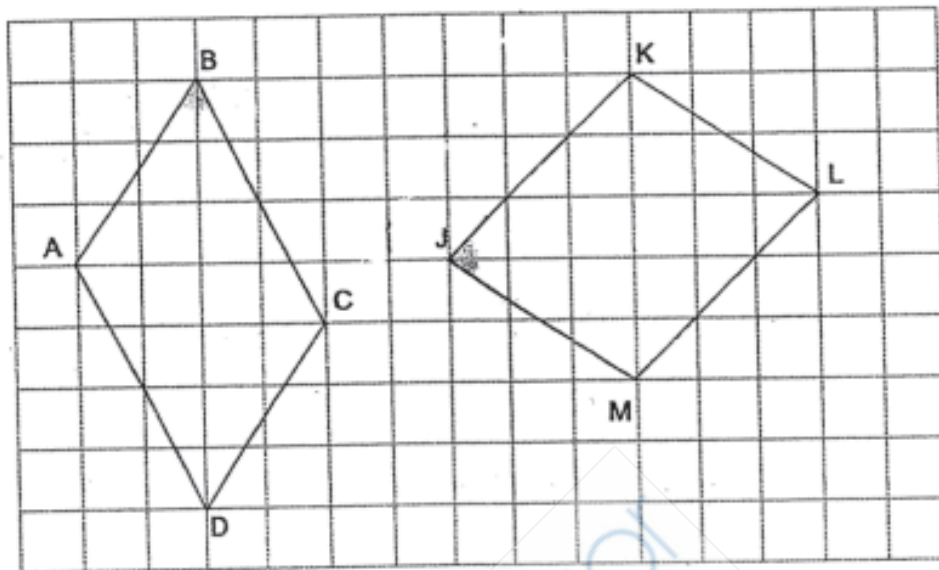
(1) 13

(2) 17

(3) 21

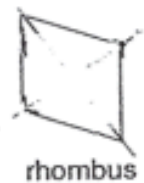
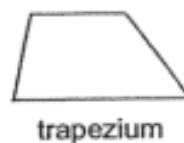
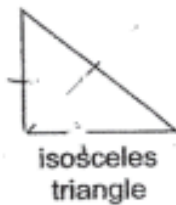
(4) 22

10. The figure below shows 2 parallelograms, ABCD and JKLM. Which of the following statements is true?



- (1) Line AB is parallel to line JK.
- (2) Line CD is perpendicular to Line JM.
- (3) Parallelogram JKLM is also a rectangle.
- (4) The angle $\angle ABC$ is equal to angle $\angle KJM$.

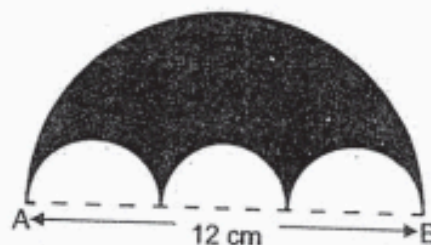
11. How many of the following shapes have at least a line of symmetry?



- (1) 1
- (2) 2
- (3) 3
- (4) 4

12. The figure below is made up of a large semi-circle and 3 small identical semi-circles. Given that the length of AB is 12 cm, find the area of the shaded part in terms of π .

- (1) $12\pi \text{ cm}^2$
- (2) $18\pi \text{ cm}^2$
- (3) $24\pi \text{ cm}^2$
- (4) $48\pi \text{ cm}^2$

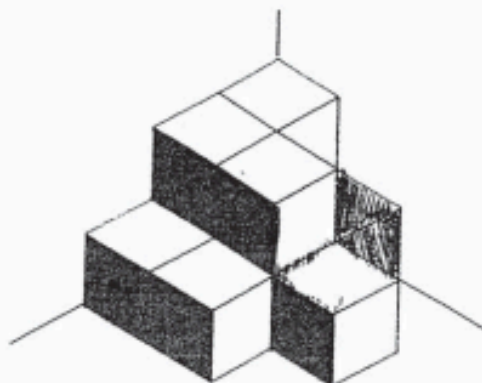


13. The distance between Point A and B is 480 m. John started cycling from point A to B at an average speed of 3 m/s while Peter started cycling from point B to A at an average speed of 2 m/s. How far apart will they be after 40 seconds?

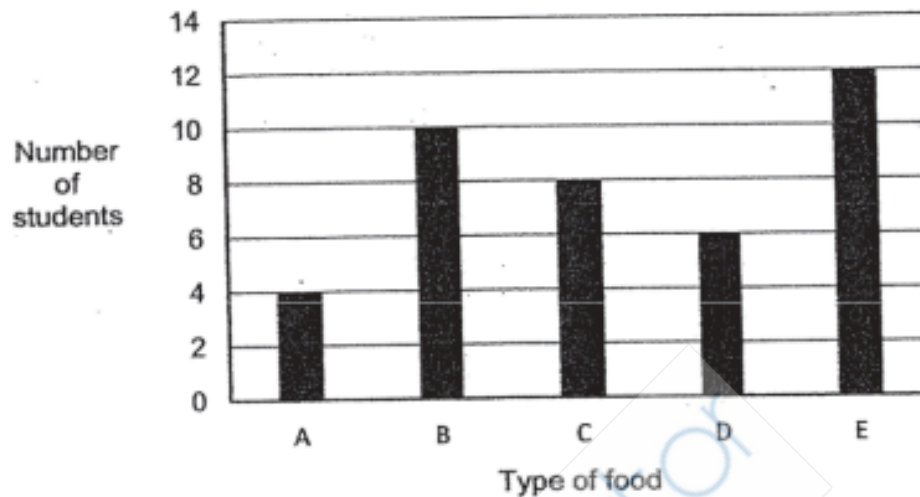
- (1) 40 m
- (2) 80 m
- (3) 120 m
- (4) 280 m

14. The figure below shows 10 cubes glued together to form a solid. The entire solid, including the base, was then painted red. How many cubes have only 3 of the faces painted?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

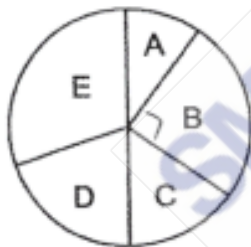


15. The bar graph below shows the result of 40 students voting for their favourite type of food, A to E.

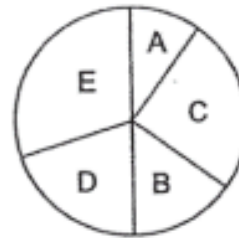


Which pie chart below best represents the information in the bar graph?

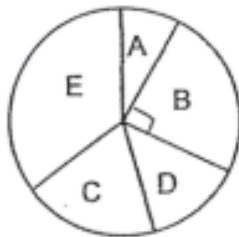
(1)



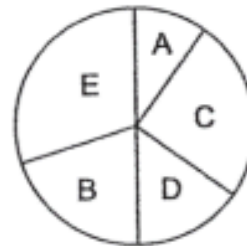
(3)



(2)



(4)



End of Booklet A

Booklet B

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided.

For questions which require units, give your answers in the units stated. **(5 marks)**

16. Express $7\frac{3}{5}$ as a decimal.

Ans: _____

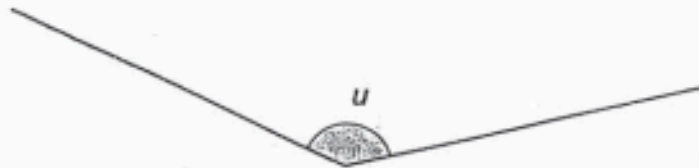
17. Find the value of 2.6×40 .

Ans: _____

18. Express $\frac{11}{20}$ as a percentage.

Ans: _____ %

19. Measure and write down the size of $\angle u$.



Ans: _____

20. 3 ℓ of water was poured into 4 glasses equally. What is the volume of water in each glass?

Ans: _____ ℓ

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. **(20 marks)**

21. John received the following test results from the school. What did John get for his Chinese Language marks if the average marks for all four subjects is 75?

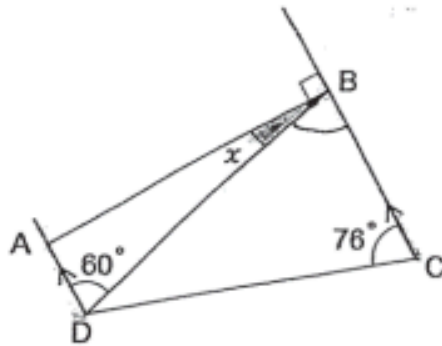
Subjects	Marks
English Language	68
Mathematics	74
Science	83
Chinese Language	?

Ans: _____

22. Farhana took 8 minutes to walk home from school, which was 1.2 km away. What was her average speed?

Ans: _____ m/ min

23. In the figure below, not drawn to scale, AD is parallel to BC. Find $\angle x$.



Ans: _____°

24. Mr Chua had 36 kg of rice. He wanted to pack them into smaller bags of $\frac{4}{5}$ kg each. How many packets of rice will he get?

Ans: _____

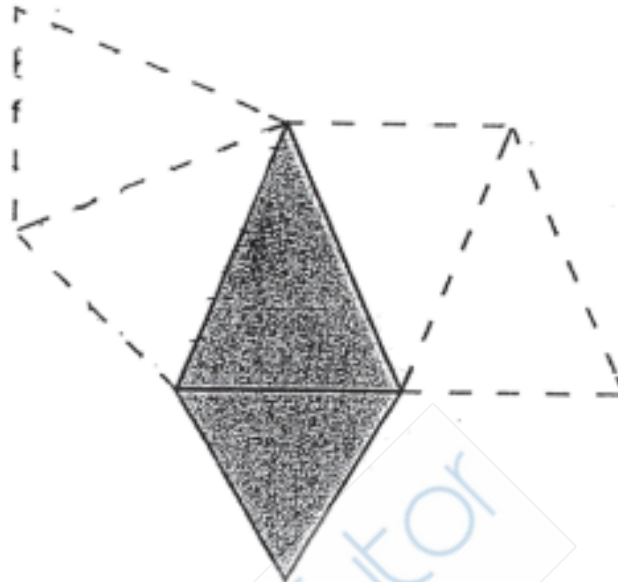
25. A vase was sold at a 40% discount for \$48. What was the original price of the vase before the discount?

Ans: \$ _____

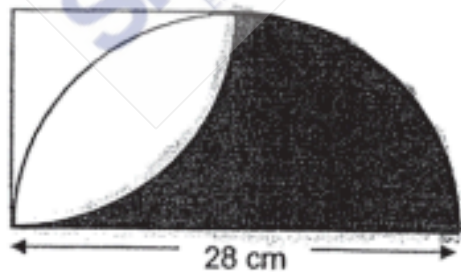
26. A container completely filled with water weighed $1\frac{4}{5}$ kg. After pouring out $\frac{2}{3}$ of the water, it weighed 1kg. What was the mass of the container?

Ans: _____ kg

27. The net of a pyramid drawn below has 2 missing faces. Shade 2 faces to complete the net of the pyramid.



28. The figure below shows a semi-circle overlapping with a quadrant. Find the perimeter of the shaded part. (Take $\pi = \frac{22}{7}$)

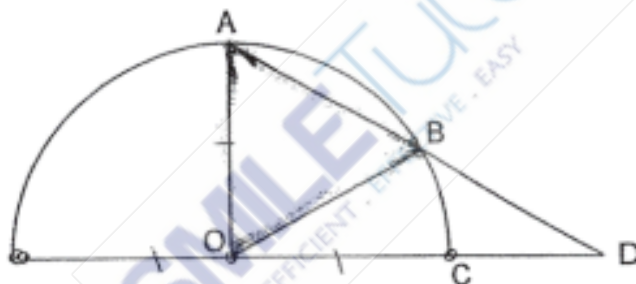


Ans: _____ cm

29. Charmaine read 30 pages on Monday and $\frac{1}{2}$ of the remaining book on Tuesday. She was then left with 20% of the book unread. How many pages does the book have?

Ans: _____

30. The figure below, not drawn to scale, shows a semi-circle with centre O and straight lines AD, OB and CD.



Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick ✓ to indicate your answer.

Statement	True	False	Not possible to tell
a) $\angle OAB$ is equal to $\angle OBA$.			
b) Triangle OAB is an equilateral triangle.			

End of Booklet B

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

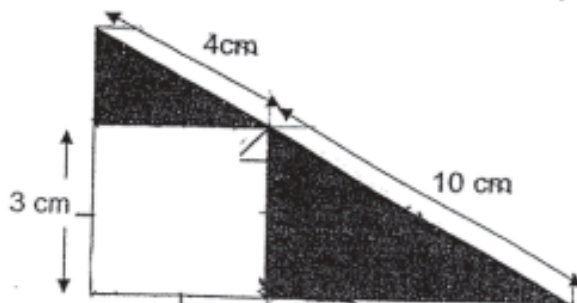
1. A crate contains apples, oranges and pears. $\frac{1}{2}$ of the fruits are pears. The ratio of the number of apples to oranges is 3 : 4. What is the ratio of the number of pears to the number of oranges?

Ans: _____

2. The exchange rate for Singapore dollar (SGD) to Malaysia ringgit (MYR) is 10 SGD = 32.35 MYR. How much MYR will I get if I exchange 220 SGD?

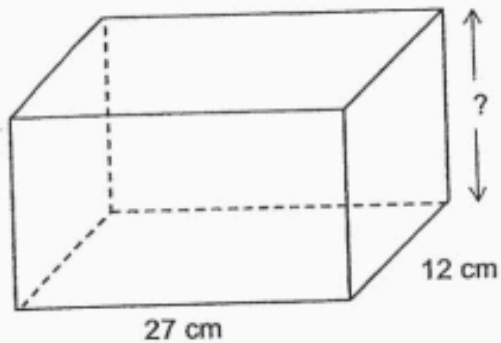
Ans: MYR _____

3. The figure below, not drawn to scale, shows a square in a right-angle triangle. Find the area of the shaded part.



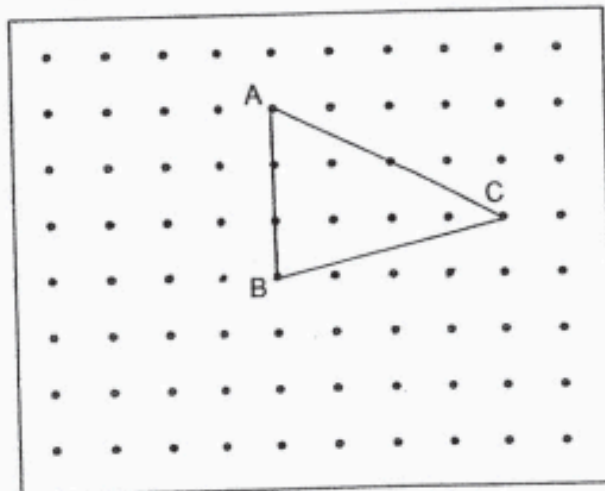
Ans: _____ cm²

4. Water was flowing out from a leaking tap at a rate of 270ml per minute, filling up the container shown below. It took 27 minutes for the container to be completely filled with water. What is the height of the container?



Ans: _____ cm [2]

5. Triangle ABC is drawn on the square grid as shown below.
 By joining dots on the grid with straight lines,
 (a) draw and label a trapezium CABF such that the length of BF is half of AC.
 (b) draw and label Triangle ABD such that its area is half of Triangle ABC.
 Triangle ABD must not overlap with trapezium CABF.



For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

6. Helen is $(y + 8)$ years old now. She is 3 years older than Bonny.
(a) What will be their total age in 2 years' time in terms of y ?

Ans: (a) _____ [2]

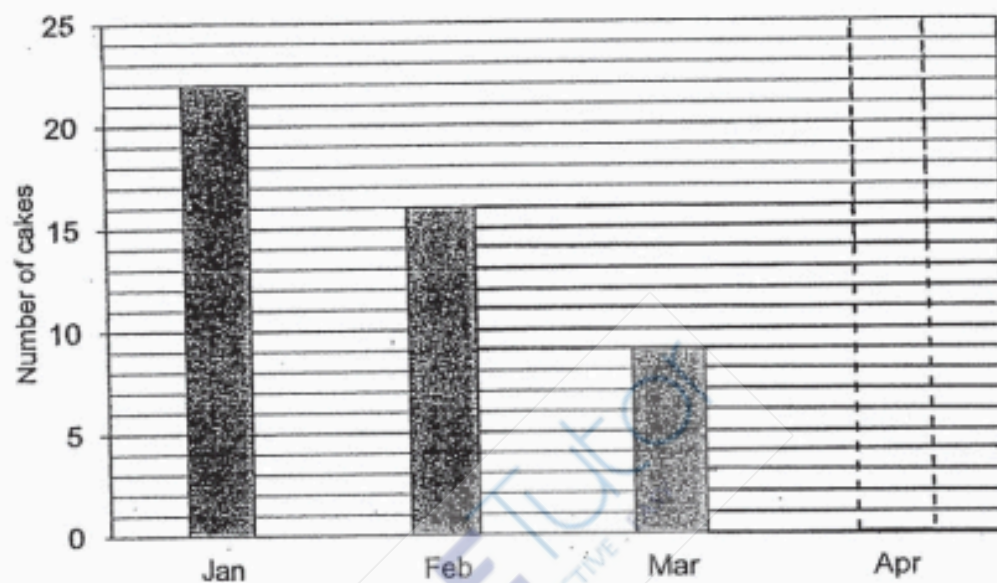
- (b) If $y = 5$, find their total age in 2 years' time.

Ans: (b) _____ [1]

7. The bar graph below shows the number of cakes a bakery sold from January to March.

- (a) The number of cakes sold in March was 15% of the total number of cakes sold from January to April.

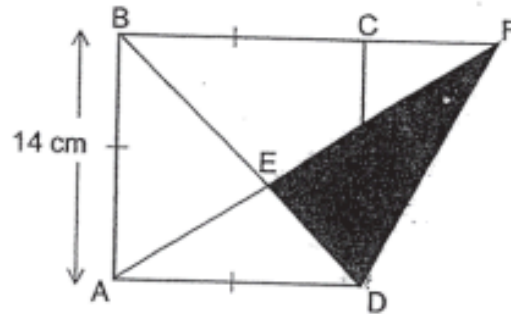
What was the total number of cakes sold from January to April?



Ans: (a) _____ [2]

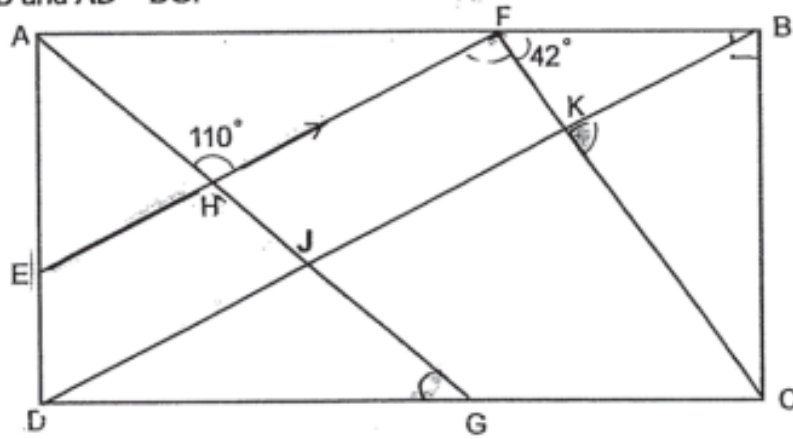
- (b) Draw and shade the bar representing the number of cakes sold in April above. [1]

8. In the figure below, not drawn to scale, ABCD is a square with a length of 14 cm.
 Given that BCF is a straight line, and the area of triangle AED is 36.75 cm^2 , find the area of triangle EFD.



Ans: _____ [3]

9. In the figure below, not drawn to scale, ABCD is a rectangle. EF is parallel to BD and $AD = DG$.



(a) Find $\angle AFE$.

(b) Find $\angle BKC$.

Ans: (a) _____ [1]

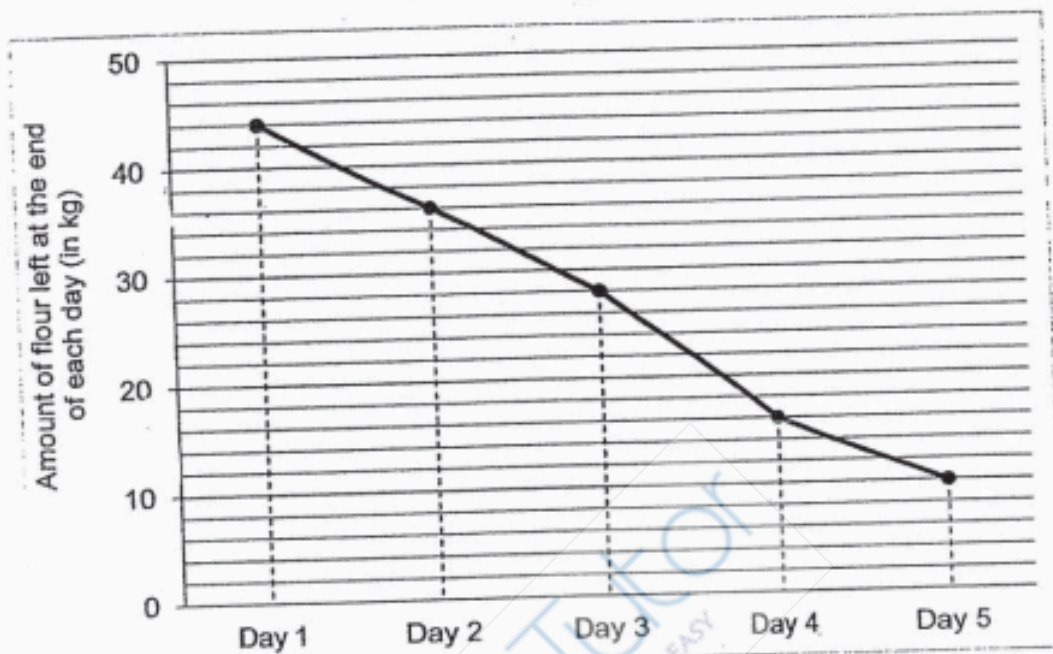
Ans: (b) _____ [2]

10. The cost of an adult ticket to a concert was \$68.80. The cost of a child ticket was \$32.80. The total amount of money collected from ticket sales was \$28 100 for a capacity of 500 people. How many adults attended the concert?

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Ans: _____ [4]

11. A baker had a 50-kg sack of flour at first. The graph shows the amount of flour left at the end of each day for 5 days.



- (a) Which day did the baker use the greatest amount of flour?

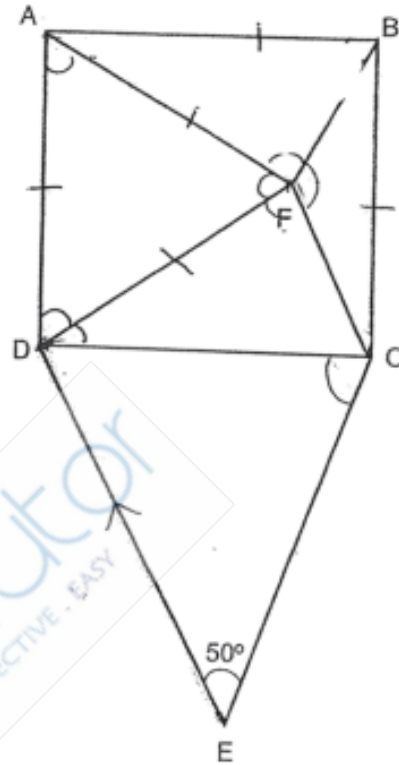
Ans: (a) _____ [1]

- (b) What percentage of the 50-kg sack of flour was used by day 5?

Ans: (b) _____ [2]

12. In the figure below, ABCD is a square. ADF is an equilateral triangle and DECF is a trapezium. $DE \parallel FC$, $\angle DEC = 50^\circ$.

- (a) Find $\angle DCF$ $\angle DCE$
(b) Find $\angle BFC$



Ans: (a) _____ [2]

(b) _____ [2]

13. Fred, Gerald and Harry shared \$123 altogether. At a toy shop, Fred spent $\frac{2}{5}$ of his money, Gerald spent $\frac{3}{4}$ of his money and Harry spent $\frac{2}{3}$ of his money. Fred and Gerald spent the same amount of money and Harry spent twice of what Fred spent. Find the amount of money Gerald had at first.



Ans _____ [4]

14. Mdm Pang baked some cookies. She gave $\frac{1}{4}$ of it to her relatives and gave 80 cookies to her friends. She was left with $\frac{1}{3}$ of it.

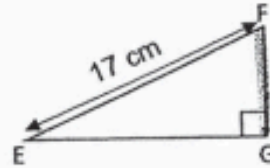
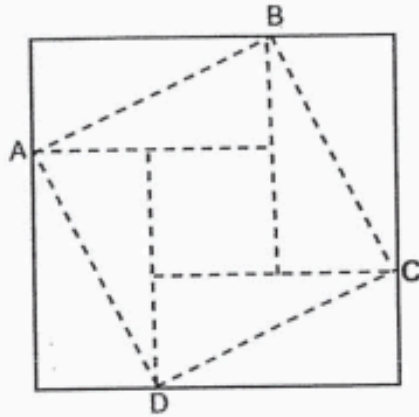
(a) How many cookies had Mdm Pang left?

Ans: (a) _____ [3]

- (b) Mdm Pang packed the leftover cookies into 10 small and large bags. The number of cookies in each large bag is twice the number of cookies in each small bag. How many large bags of cookies were there?

Ans: (b) _____ [2]

15. Celine took a square piece of paper and cut along the dotted line shown below. As a result, she got a small square of area 49 cm^2 and 8 identical right-angled triangles. Triangle EFG is one such right-angled triangles.



- (a) Find the area of the square ABCD.

- (b) Find the length of FG.

Ans: (a) _____ [1]

Ans: (b) _____ [4]

Do this

17. The diagram below shows figures made up of dots and lines.

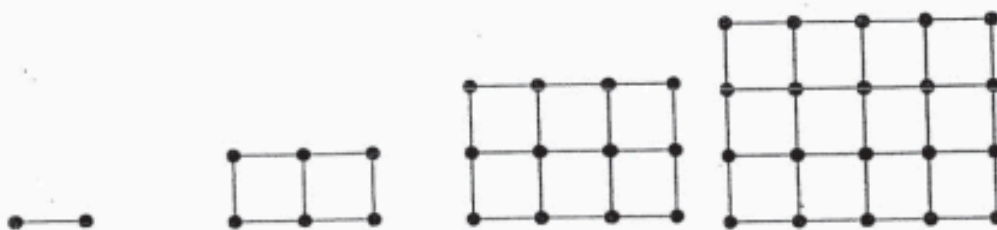


Figure 1

Figure 2

Figure 3

Figure 4

(a) Complete the table below.

Figure No.	Number of dots	Number of lines
1	2	1
2	6	7
3	12	17
4	20	31
5		

[2]

(b) Which figure no. will it be where there are 156 dots?

Ans: (b) _____ [2]

Do
this

Answer Sheet

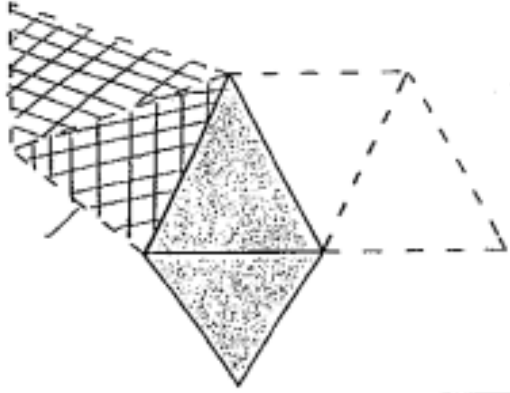


BOOKLET A (PAPER 1)

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	3	4	1	2	3	1	2	2
Q11	Q12	Q13	Q14	Q15					
2	1	4	2	2					

BOOKLET B (PAPER 1)

Q16	7.6
Q17	104
Q18	55%
Q19	142°
Q20	$\frac{3}{4}L$
Q21	Average = 75 $68 + 74 + 83 = 225$ $75 \times 4 = 300$ $300 - 225 = 75$
Q22	$1.2\text{km} = 1200\text{m}$ $1200 \div 8 = 150 \text{ m/min}$
Q23	$180 - 90 = 90$ $90 - 60 = 30^\circ$
Q24	$36 \div \frac{4}{5}$ $= 45$
Q25	$60\% : \$48$ $1\% : 48 \div 60$ $= 0.8$ $0.8 \times 100 = \$80$
Q26	$\frac{2}{3}$ of water : $1\frac{4}{5} - 1 = \frac{4}{5}$ $\frac{1}{3}$ of water : $\frac{4}{5} \times \frac{1}{2}$ $= \frac{2}{5}$ $1 - \frac{2}{5} = \frac{3}{5} \text{ kg}$

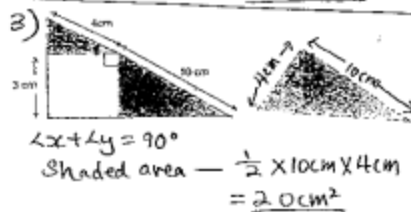
Q27	
Q28	<p>Semicircle : $2\pi r \times \frac{1}{2}$</p> $= 2\left(\frac{22}{7}\right) \times 14 \times \frac{1}{2}$ $= 44$ $44 + 28 = 72\text{cm}$
Q29	$5u - 2u = 3u$ $3u = 30$ $u = 30 \div 3$ $= 10$ $5u = 10 \times 5$ $= 50 \text{ pages}$
Q30	<p>a) True ✓</p> <p>b) Not possible to tell ✓</p>

Maths Prelims 2022 Paper 2

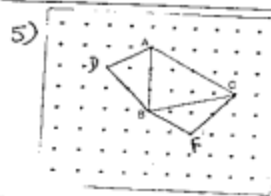
1) P: Total A: 0 | A: 0
 1: 2 3: 4 | 7
 = 7: 14

P: 0 — T: 4

2) SGD 10 — MYR 32.35
 x22 SGD 220 — MYR 32.35 x 22
 = MYR 711.70



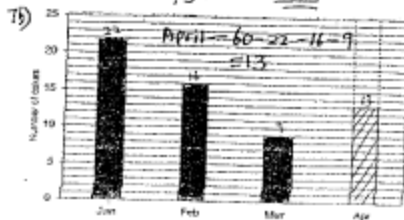
4) Height — $\frac{27 \times 270 \text{ cm}^3}{27 \text{ cm} \times 12 \text{ cm}} = 22\frac{1}{2} \text{ cm}$



6a) Bonny now — $y + 8 - 3 = y + 5$
 Total now — $(y + 8 + y + 5 + 2 + 2) \text{ yrs}$
 = $(2y + 17) \text{ yrs}$

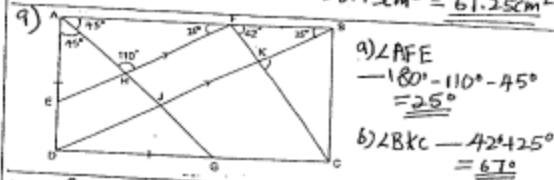
6b) Total — $(2 \times 5 + 17) \text{ yrs}$
 = 27 yrs

7a) 15% — 9
 $100\% — \frac{9}{15} \times 100 = 60$



8) Area of AFD — $\frac{1}{2} \times 14 \text{ cm} \times 14 \text{ cm} = 98 \text{ cm}^2$

Area of EFD — $98 \text{ cm}^2 - 36.75 \text{ cm}^2 = 61.25 \text{ cm}^2$



10) If all 500 were children, amount collected will be — $\$32.80 \times 500 = \16400

Diff in total — $\$28100 - \$16400 = \$11700$

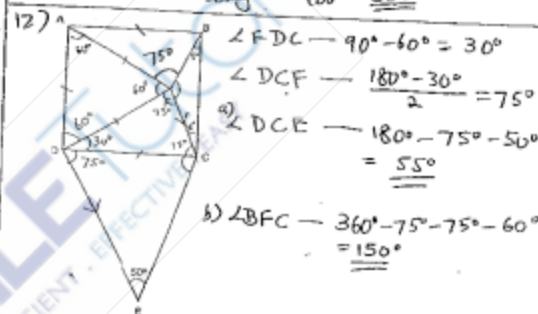
Diff between 1 adult and 1 child ticket — $\$68.80 - \$32.80 = \$36$

No. of adults — $\frac{\$11700}{\$36} = 325$

11a) 4 (steepest line between Day 3 and Day 4)

11b) Used — $50 \text{ kg} - 10 \text{ kg} = 40 \text{ kg}$

% used — $\frac{40 \text{ kg}}{50 \text{ kg}} = \frac{80}{100} = 80\%$



13) $\frac{2}{5} \text{ of } F = \frac{3}{4} \text{ of } G$

$\frac{6}{15} \text{ of } F = \frac{6}{8} \text{ of } G$

Harry — $\frac{2}{3} = \frac{12}{18}$

Fred — 15u

Gerald — 8u

Harry — 18u

Total — $15u + 8u + 18u = 41u$

41u — $\$123$

1u — $\frac{\$123}{41} = \3

8u — $\$3 \times 8 = \24

14a) Gave to relatives — $\frac{1}{4} = \frac{3}{12}$

Left — $\frac{1}{3} = \frac{4}{12}$

Gave to friends — $1 - \frac{3}{12} - \frac{4}{12}$
 $= \frac{5}{12}$

$\frac{5}{12} = 80$

$\frac{1}{12} = \frac{80}{5} = 16$

$\frac{4}{12} = 16 \times 4 = \underline{64}$
 (Left)

14b) 9 small + 1 large — 10 bags
 (2 small) x

8 small + 2 large — 10 bags
 (4 small) x

7 small + 3 large — 10 bags
 (6 small) x

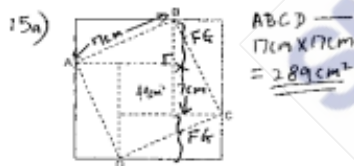
6 small + 4 large — 10 bags
 (8 small) x

5 small + 5 large — 10 bags
 (10 small) x

4 small + 6 large — 10 bags
 (12 small) x

4 + 12 = 16, 64 is divisible by 16

Ans: 6



b) 4 triangles — $289\text{cm}^2 - 49\text{cm}^2 = 240\text{cm}^2$

8 triangles — $240\text{cm}^2 \times 2 = 480\text{cm}^2$

Area of large square — $480\text{cm}^2 + 49\text{cm}^2 = 529\text{cm}^2$

Length of small square — $\sqrt{49\text{cm}^2} = 7\text{cm}$

Length of large square — $\sqrt{529\text{cm}^2} = 23\text{cm}$

FG — $\frac{23\text{cm} - 7\text{cm}}{2} = \underline{8\text{cm}}$

16) Saturday

C $\frac{100\%}{75}$
 A $\frac{100\%}{100\%}$

Sunday

children — 124% and $75 + \frac{24}{100} \times 75 = 93$

Adults — 85%

Total on Sunday — 124% + 85% and 93 children
 $= 209\%$ and children

209% — $2810 - 93 = 2717$

1% — $\frac{2717}{209} = 13$

200% — $13 \times 200 = 2600$

Saturday — $2600 + 75 = \underline{2675}$

17) No. of dots — Figure number x (Figure number + 1)

No. of lines — (Figure number)² + (Fig. no. - 1) x (Fig. no. + 1)

a) No. of dots in figure 5 — $5 \times (5 + 1) = \underline{30}$

No. of lines in figure 5 — $5 \times 5 + (5 - 1) \times (5 + 1) = 5 \times 5 + 4 \times 6 = \underline{49}$

b) Figure 10 — $10 \times 11 = 110$

Figure 11 — $11 \times 12 = 132$

Figure 12 — $12 \times 13 = 156$

↑ Answer

END
5.

ST NICHOLAS PRELIM PAPER



Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3, or 4) on the Optical Answer Sheet.

(20 marks)

1. What is the value of 4 hundreds, 9 tenths and 7 hundredths?

- (1) 409.7
- (2) 409.07
- (3) 400.907
- (4) 400.97

2. Find the value of $35 - 5 \times 3 + 48 \div 6$.

- (1) 23
- (2) 28
- (3) 38
- (4) 98

3. There were 16 chairs in a room at first. Another 4 chairs were put in the room.
Find the percentage increase in the number of chairs in the room.

- (1) 20%
- (2) 25%
- (3) 75%
- (4) 80%

4. Which of the following is the same as 20 km 57 m?

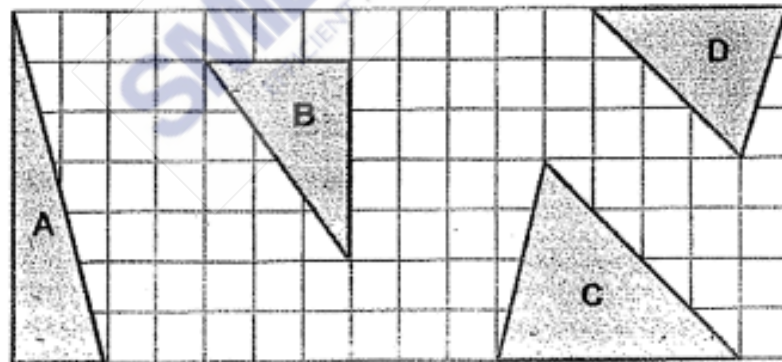
- (1) 2057 m
- (2) 2570 m
- (3) 20 057 m
- (4) 20 570 m

5. What is 45 minutes before the time shown on the clock?



- (1) 19 15
- (2) 20 45
- (3) 22 55
- (4) 23 40

6. Which triangles, A, B, C and D have the same area?



- (1) A and B
- (2) B and C
- (3) B and D
- (4) C and D

7. The figure below shows a pyramid.



Which of the following nets **cannot** be folded to form the pyramid?

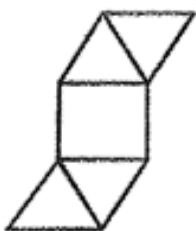
(1)



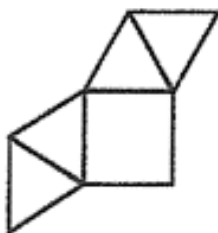
(2)



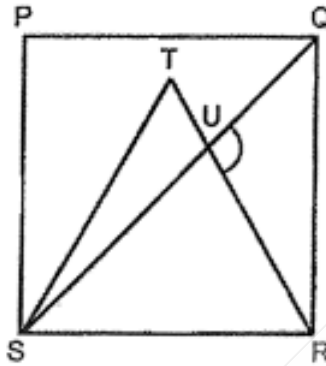
(3)



(4)



8. In the figure, PQRS is a square. RST is an equilateral triangle. QUS is a straight line. Find $\angle QUR$.



- (1) 135°
- (2) 105°
- (3) 75°
- (4) 60°

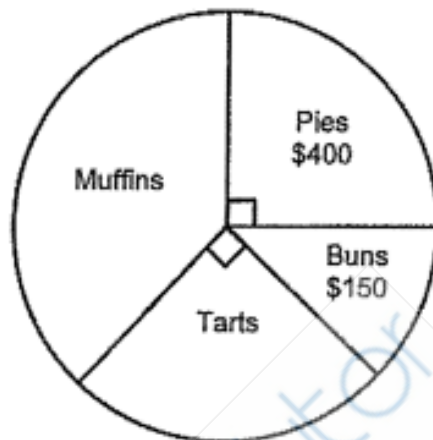
9. Wynona wrote the numbers below :

20, 15, 15, 0, 10

What is the average of all the numbers?

- (1) 9
- (2) 12
- (3) 15
- (4) 60

10. The pie chart shows the amount of money collected by a bakery in a day.
How much money was collected from the sale of muffins?



- (1) \$250
(2) \$550
(3) \$650
(4) \$950

11. The table shows the number of badges three girls had at first.

Name	Number of badges
Skyla	36
Noemi	21
Goldie	?

Skyla and Noemi each gave Goldie the same number of badges. Then Skyla and Goldie had 26 badges each. How many badges did Goldie have at first?

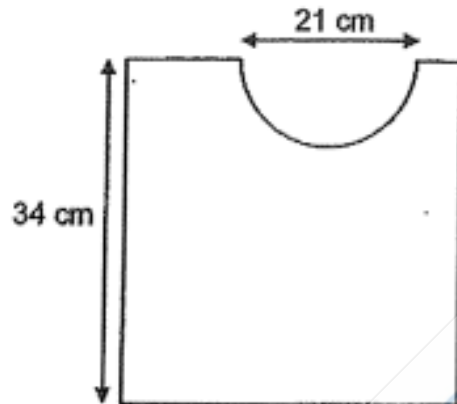
- (1) 5
- (2) 2
- (3) 6
- (4) 4

12. Joel packed 36 English books and 54 Chinese books into as many bags as possible, with no remainder. He placed the same number of books in each bag. The number of English books in each bag was the same. How many English books did he pack into each bag?

- (1) 18
- (2) 2
- (3) 3
- (4) 4

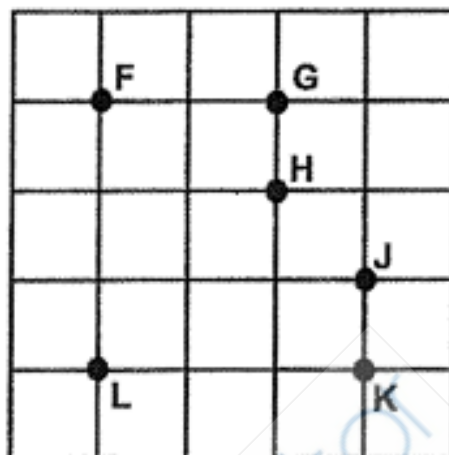
13. A semicircle with a diameter of 21 cm is cut out from a square piece of cardboard.

What is the perimeter of the remaining piece of cardboard? (Take $\pi = \frac{22}{7}$)



- (1) 188 cm
- (2) 157 cm
- (3) 148 cm
- (4) 135 cm

14. Which one of the following statements is TRUE of the diagram shown?



- (1) Point G is north-east of Point L.
- (2) Point G is north-west of Point K.
- (3) Point H is south-west of Point L.
- (4) Point K is south-east of Point F.

15. Levene gave $\frac{1}{5}$ of her balloons to Brissa. She also gave Odette 10 fewer balloons than Brissa. In the end, Levene had 82 balloons. How many balloons did Levene give away altogether?

- (1) 33
- (2) 38
- (3) 115
- (4) 120



Questions 16 to 20 carry 1 mark each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

16. Write a decimal that is between 8.4 and 8.5

Ans: _____

17. Arrange the following from the greatest to the smallest.

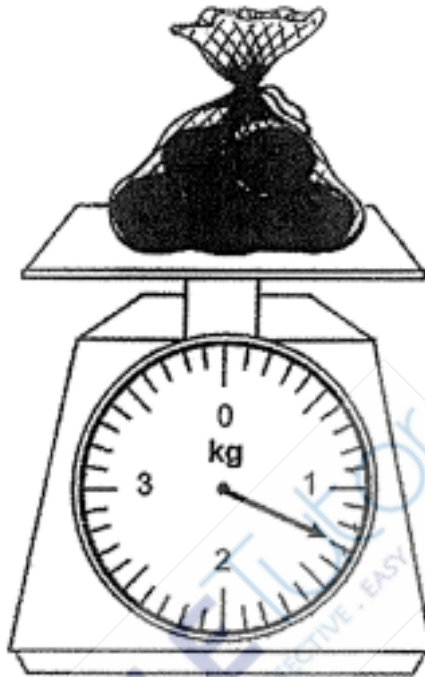
$$1\frac{9}{10}, \quad \frac{14}{5}, \quad \frac{9}{6}, \quad 2$$

Ans: _____

18. Express 0.1% as a fraction.

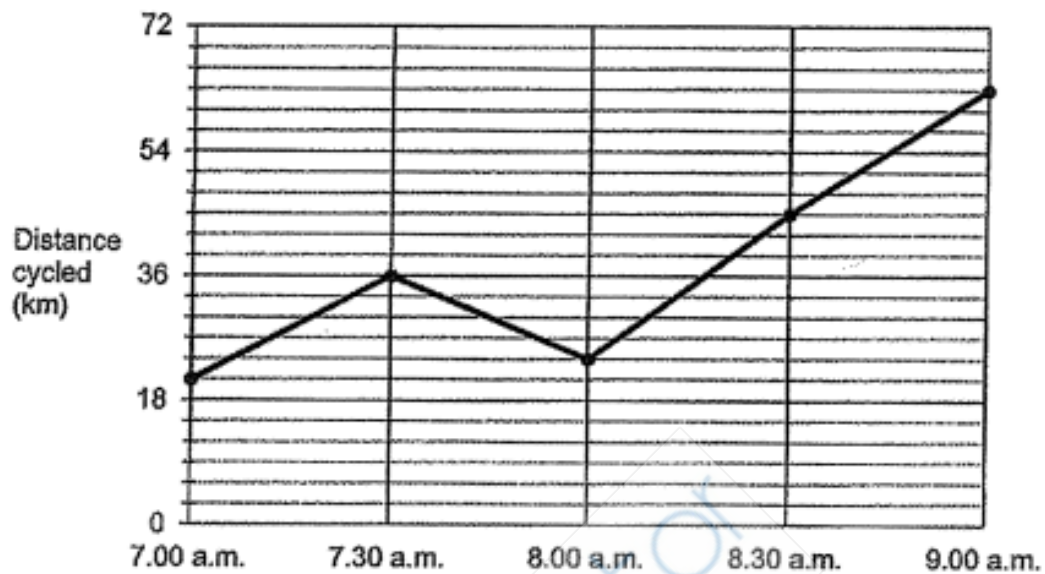
Ans: _____

19. What is the mass of the bag of onions?



Ans: _____ kg

20. Kalli took part in a cycling race. The line graph shows the total distance she cycled from 7 a.m. to 9 a.m.



During which one-hour period was the distance cycled by Kalli the longest?

Ans: From _____ a.m. to _____ a.m.

Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

21. The table below shows the number of points scored by a group of boys and girls in a quiz. What is the total number of boys and girls who scored at least 4 points?

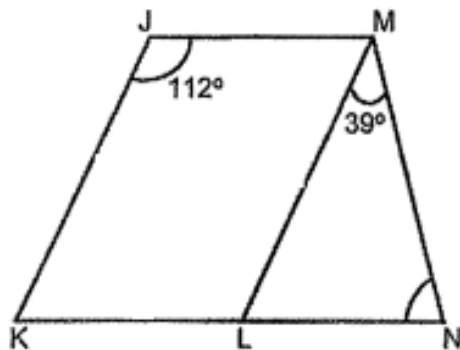
Number of points scored	1	2	3	4	5
Number of boys	3	9	13	8	7
Number of girls	4	11	6	12	10

Ans: _____

22. Pam went shopping with \$14*d*. She bought a fan for \$5*d*. She also bought an oven at \$60 more than the fan. How much money did she have left? Leave your answer in terms of *d*.

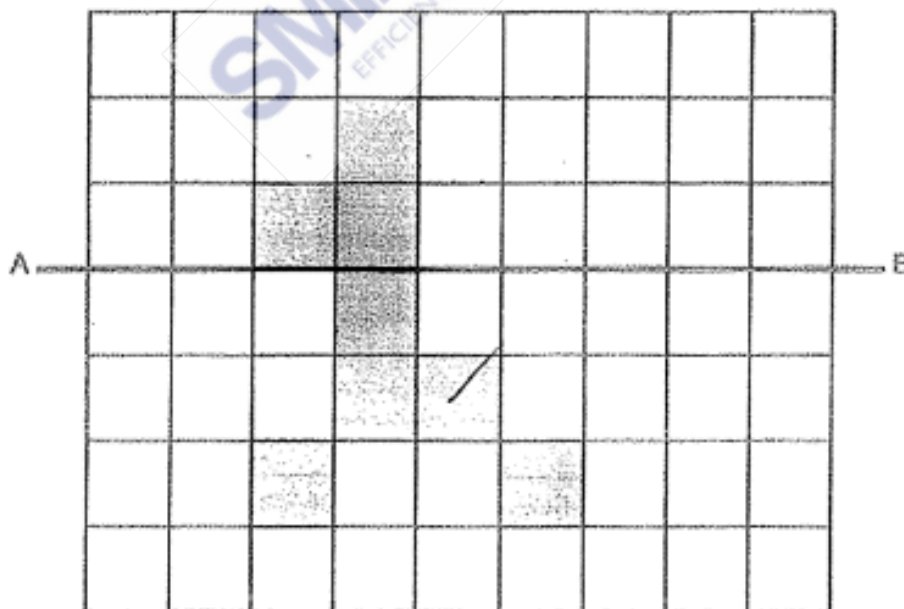
Ans: \$ _____

23. In the figure, JKLM is a parallelogram. $\angle KJM = 112^\circ$ and $\angle LMN = 39^\circ$. KLN is a straight line. Find $\angle MNL$.



Ans: _____°

24. The figure below is made up of identical squares. Shade the least number of squares so that AB is the line of symmetry.



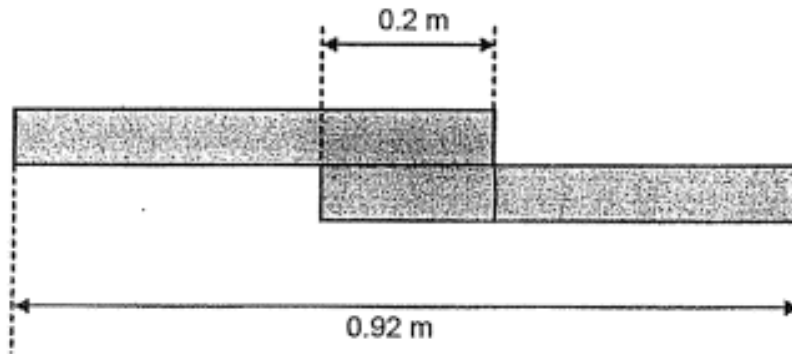
25. At first, a container was $\frac{3}{5}$ filled with lemonade. Then 140 cm^3 of lemonade was poured into the container. In the end, the container was $\frac{5}{6}$ filled. What is the capacity of the container?

Ans: _____ cm^3

26. Ramesh walked from his house to the park. He walked at a speed of 5 km/h and took 24 minutes to reach the park. If he had walked 1 km/h slower, how long would he take to reach the park?

Ans: _____ h

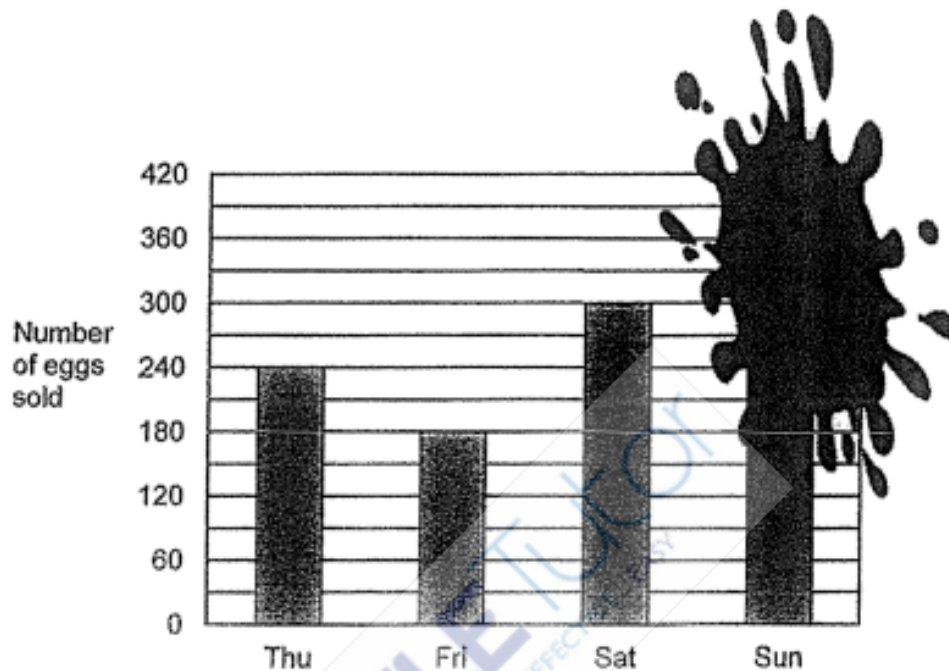
27. In the figure below, two identical poles are taped together.



What is the length of each pole?

Ans: _____ cm

28. The bar graph below shows the number of eggs sold at a market over 4 days. The number of eggs sold on Sunday was smudged with ink. The average number of eggs sold over the 4 days was 200.5. How many eggs were sold on Sunday?



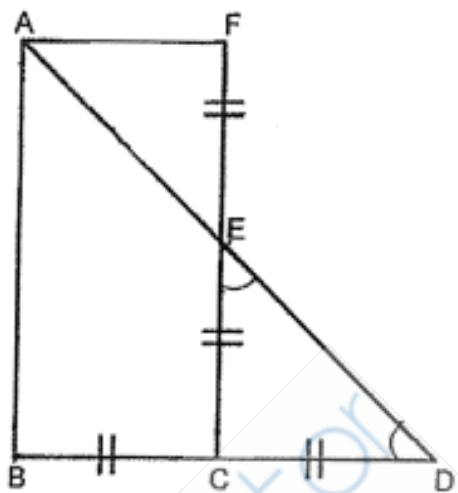
Ans: _____

29. There were a total of 71 chocolate buns and kaya buns in a box. $\frac{1}{2}$ of the chocolate buns was 8 more than $\frac{1}{3}$ of the kaya buns. How many kaya buns were there in the box?



Ans: _____

30. In the figure below, the area of triangle AEF is 18 cm^2 . Find the length of AB.



Ans: _____ cm^2

End of Paper

Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1. Mika had \$80. She wanted to buy 25 muffins at \$7 each. How much money was she short of?

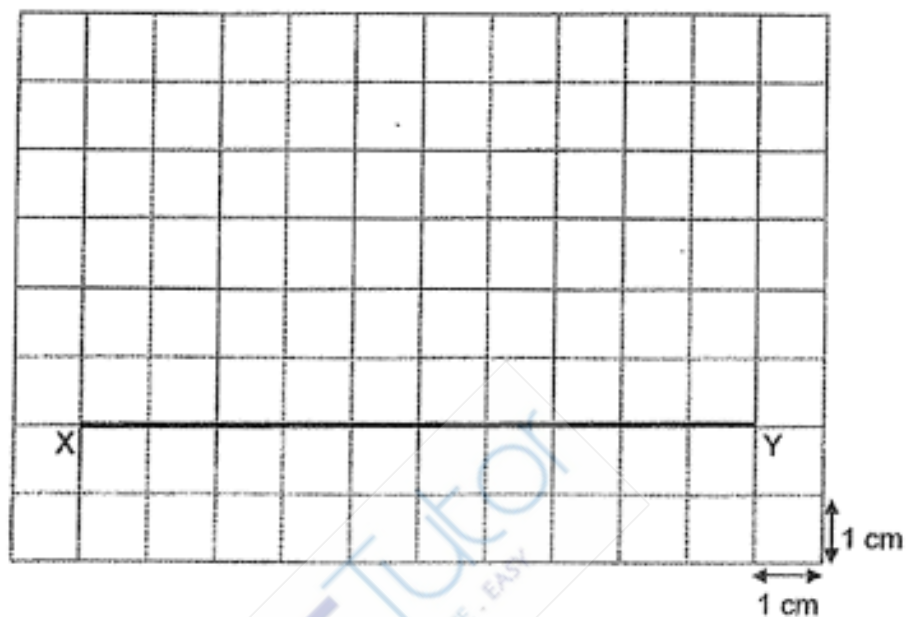
Ans : \$ _____

2. The figure is made up of 2 identical squares, P and Q, and a rectangle, R. The area of the figure is 512 cm^2 . The perimeter of P is 52 cm. Find the area of rectangle R.



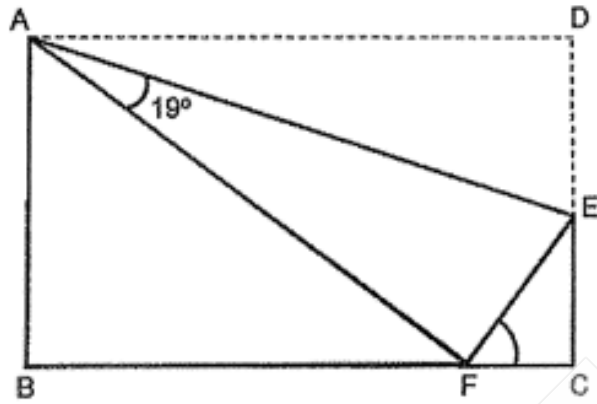
Ans : _____ cm^2

3. Using the grid below, draw and label trapezium $WXYZ$ such that $\angle XYZ = 45^\circ$ and $\angle WXY = 90^\circ$. $XW = WZ = 5$ cm. Measure the length of XZ .



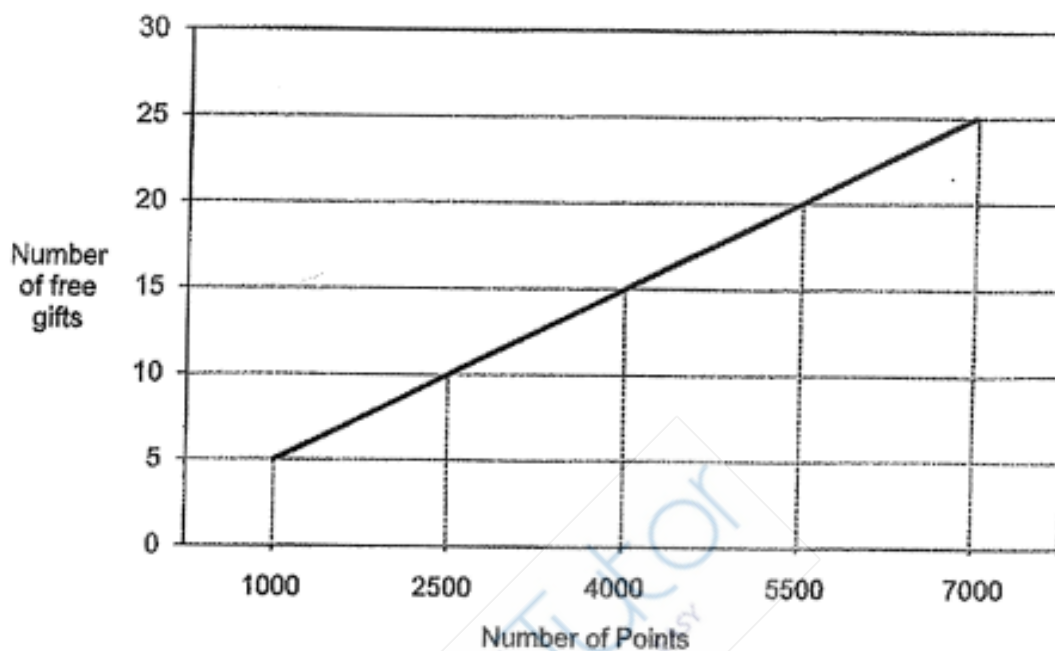
Ans : _____ cm

4. The figure shows a rectangle ABCD being folded along AE. Find $\angle CFE$.



Ans : _____°

5. The line graph shows the amount of points needed to exchange for free gifts at a supermarket.



- (a) How many free gifts can be exchanged with 2800 points?

Ans : (a) _____

- (b) Kai Feng has already earned 2000 points. How many more points does he need in order to exchange for a total of 27 free gifts?

Ans : (b) _____

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in the brackets () at the end of each question or part-question. (45 marks)

6. Box Q and Box R contained a total of 126 beads. Another 24 beads were put into Box R. Then Box Q contained 2 more beads than Box R. How many beads were there in each box at first?

Ans : Box Q _____ [2]

Box R _____ [1]

7. At a cafe, Mona bought 6 chicken wings. She also bought 3 fruit tarts at \$1.50 each. Lauretta bought 9 chicken wings. Altogether, Mona spent \$3.90 less than Lauretta. How much did 1 such chicken wing cost?

Ans : _____ [3]

8. Brantley is $5k$ years old now. In 8 years' time, Brantley will be 4 times as old as Hailey.

(a) Find Hailey's age in 8 years' time in terms of k .

Ans : (a) _____ [1]

(b) Given $k = 12$, find Hailey's age now.

Ans : (b) _____ [2]

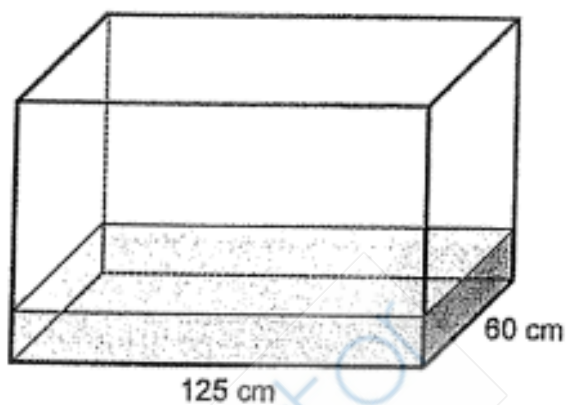
9. Papers of different masses were sold at Crafty Paper. The prices for the masses of paper are shown in the table below. Ethan chose a stack consisting of 35 sheets of paper which had a mass of 15 g each. How much did he pay altogether?

Mass of paper (grams) not exceeding	Price
50 g	\$2
120 g	\$4.50
200 g	\$8.00
For every additional 100 g or part thereof	\$3.80



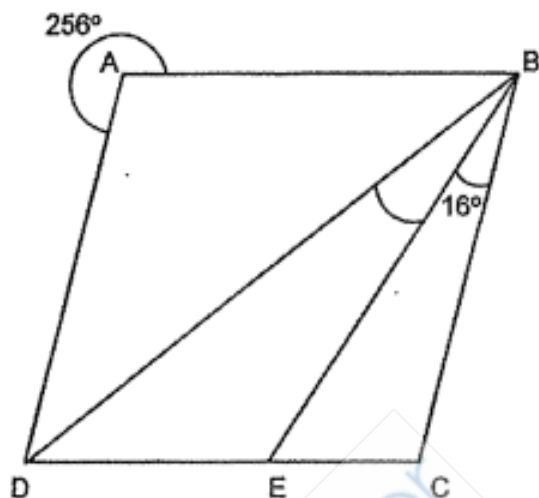
Ans : _____ [3]

10. A rectangular tank measuring 125 cm by 60 cm was filled with water to a height of 14 cm. When 30 ℓ of water were removed from the tank, the water level dropped to $\frac{2}{5}$ of the height of the tank. What is the capacity of the tank?



Ans : _____ [3]

11. ABCD is a rhombus. BD and BE are straight lines.



(a) Circle the words that describe BCD in the statement:

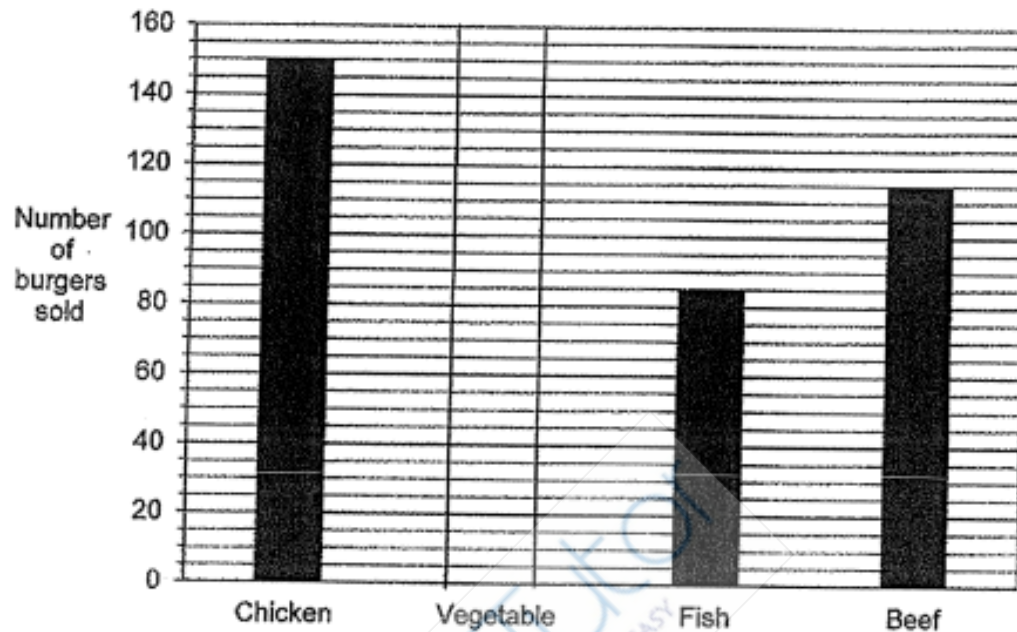
BCD (is / is not) an isosceles triangle because BC (is / is not) equal to CD.

[1]

(b) Find $\angle DBE$.

Ans : (b) _____ [2]

12. The bar graph shows the number of each type of burgers sold at a fast food restaurant on a Friday.



The table shows the prices of each type of burger.

Type of burger	Price
Chicken	\$4.50
Vegetable	\$3.80
Fish	\$4.20
Beef	\$5.50

- (a) The restaurant collected a total amount of \$437 from the sale of vegetable burgers. How many vegetable burgers were sold? Draw the bar to show the number of vegetable burgers sold. [2]

(b) What was the difference in the amount collected from the most popular burger sold and the least popular burger sold?

Ans : (b) _____ [2]

13. Alan, Brian, Carl and Dan share a box of game cards. The ratio of the number of game cards Alan has to the total number of game cards Brian, Carl and Dan have is 1 : 5. The ratio of the number of game cards Brian has to the total number of game cards Alan, Carl and Dan have is 5 : 7.

(a) Find the ratio of the number of game cards Alan has to the number of game cards Brian has.

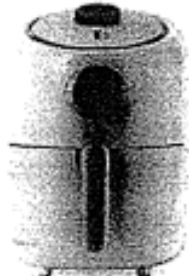
Ans : (a) _____ [1]

(b) Alan has 30 game cards. How many more game cards must he buy so that he has twice as many game cards as Brian?


Ans : (b) _____ [3]

14.

Membership Promotion!



Buy first air fryer
at 15% discount



Buy second air fryer
at 30% discount

For non-members, enjoy a 10% discount for each air fryer.

Mrs Wong paid \$341 for two air fryers by using the membership promotion shown above. How much would she have paid for 1 air fryer if she was a non-member?

Ans : _____ [4]

15. Fredrick had some coupons to sell at a funfair. Each coupon cost \$5. On the first day, he sold 264 coupons. On the second day, he sold $\frac{1}{5}$ of the remaining coupons. On the third day, he sold the rest of the coupons, and this was $\frac{1}{3}$ of the total number of coupons sold on the first two days.

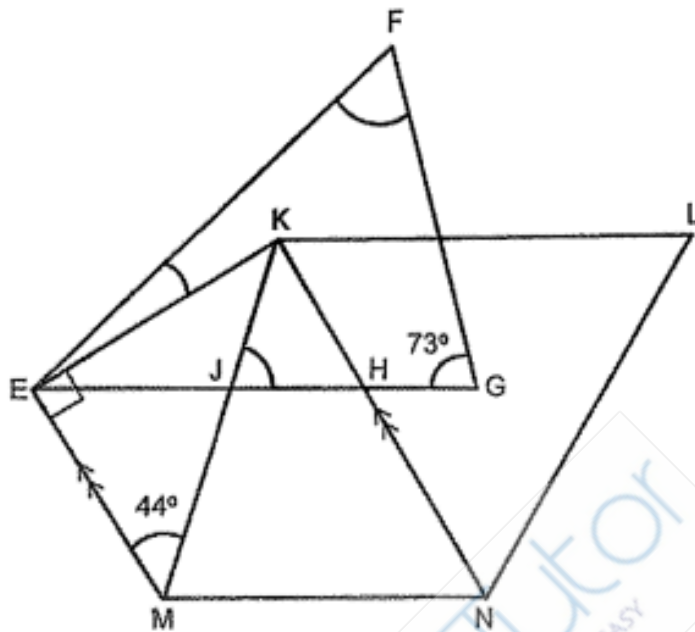
(a) What fraction of the total number of coupons did Fredrick sell on the first day?

Ans : (a) _____ [2]

- (b) Each coupon cost \$5. What was the total amount of money Fredrick collected from the sale of coupons over the three days?

Ans : (b) _____ [3]

16. EFG and KLN are triangles. KLN is an equilateral triangle. $KL \parallel JG$ and $JG \parallel MN$.



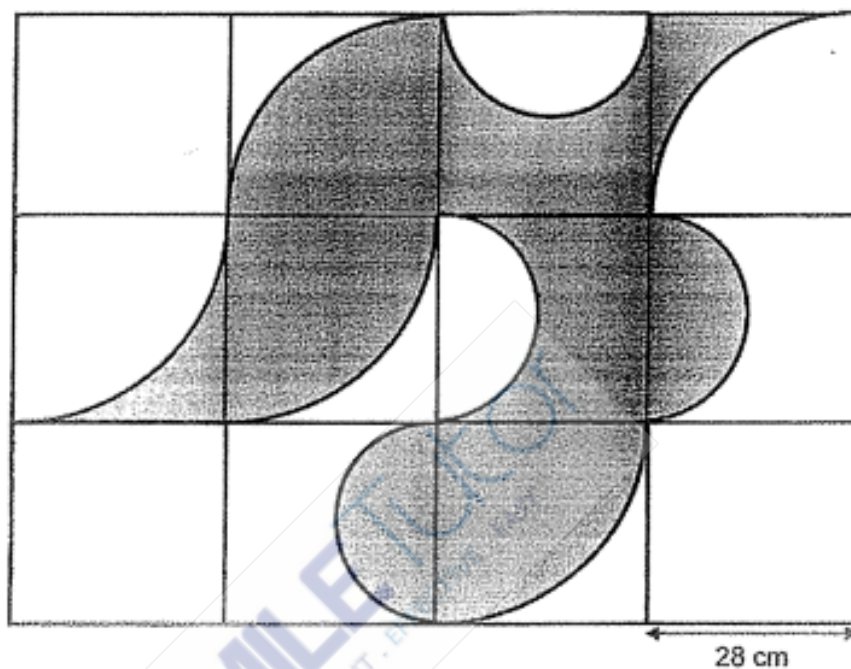
- (a) Find the sum of $\angle FEK$ and $\angle GFE$.

Ans: (a) _____ [4]

- (b) Find $\angle KJH$.

Ans: (b) _____ [1]

17. The rectangle is made up of identical squares of side 28 cm each. The outline of the shaded figure is formed by 5 identical quarter circles, 4 identical semicircles and two straight lines.



- (a) What is the perimeter of the shaded figure? (Take $\pi = \frac{22}{7}$)

Ans : (a) _____ [3]

(b) What is the area of the shaded figure? (Take $\pi = \frac{22}{7}$)



Ans : (b) _____ [2]

End of Paper

Answer Sheet

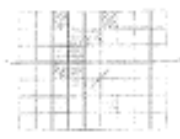


PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	2	3	3	3	1	2	2	3

Q 11	Q12	Q13	Q14	Q15
3	2	3	4	2

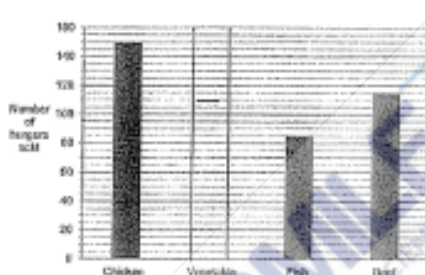
PAPER 1 BOOKLET B

Q16)	8.45
Q17)	$\frac{14}{5}, 2, 1\frac{9}{10}, \frac{9}{6}$
Q18)	$\frac{1}{1000}$
Q19)	1.3kg
Q20)	8 a.m. to 9 a.m.
Q21)	$8 + 7 + 12 + 10$ $= 37$
Q22)	$14d - 5d - (5d + 60)$ $= 4d - 60$ $= \$(4d - 60)$
Q23)	$180 - 112 = 68$ $180 - 68 - 39 = 73^\circ$
Q24)	

Q25	$\frac{5}{6} - \frac{3}{5} = \frac{25}{30} - \frac{18}{30}$ $= \frac{7}{30}$ $\frac{7}{30} = 140$ $\frac{1}{30} = 140 \div 7 = 20$ $\frac{30}{30} = 20 \times 30$ $= 600\text{cm}^3$
Q26	$S \times T = 5 \times \frac{24}{60}$ $= 2\text{km}$ $\text{New speed} = 5 - 1$ $= 4$ $2 \div 4 = \frac{1}{2} \text{ h}$
Q27	$0.92 - 0.2 = 0.72$ $\frac{0.72}{2} = 0.36$ $0.36 + 0.2 = 0.56$ $0.56 \times 100 = 56\text{cm}$
Q28	$200.5 \times 4 = 802$ $802 - 240 - 180 - 300$ $= 562 - 180 - 300$ $= 562 - 480$ $= 82$
Q29	$\frac{71 + (8 \times 3)}{5} = \frac{71 + 24}{5}$ $= \frac{95}{5}$ $= 19$ $(19 \times 3) - 24 = 57 - 24$ $= 33$
Q30	$\frac{1}{2} \times AF \times FE = 18$ $AF \times FE = 18 \times 2$ $= 36$ $36 \div 6 = 6$ $6 + 6 = 12\text{cm}$

PAPER 2

Q1)	$(25 \times 7) - 80 = \$95$
Q2)	$52 \div 4 = 13$ $(13 \times 13) \times 2 = 338$ $512 - 338 = 174\text{cm}^2$
Q3)	7cm
Q4)	$19 + 19 = 38$ $90 - 38 = 52$ $180 - 90 - 38 = 52^\circ$
Q5)	a) $2500 - 1000 = 1500$ $10 - 5 = 5$ $1500 \div 5 = 300$ $2800 - 1000 = 1800$ $1800 \div 300 = 6$ $6 + 5 = 11$ b) $27 - 5 = 22$ $22 \times 300 = 6600$ $6600 + 1000 = 7600$ $7600 - 2000 = 5600$
Q6)	$(126 + 24) - 2 = 148$ $148 \div 2 = 74$ $Q = 74 + 2 = 76$ $R = 74 - 24 = 50$ Box Q = 76 Box R = 50
Q7)	$9\text{cw} = 6\text{cw} + 8.40$ $3\text{cw} = 8.40$ $1\text{cw} = \frac{8.40}{3}$ $= \$2.80$
Q8)	a) $(\frac{5k+8}{4})$ b) $12 \times 5 = 60$ $\frac{60+8}{4} = 17$ $17 - 8 = 9$
Q9)	$35 \times 15\text{g} = 525\text{g}$ $8 + (3.80 \times 4) = \$23.20$
Q10)	$125 \times 60 \times 14 = 105000$ $(105000 \div 1000) - 30 = 75$

	$75 \ell = 75 \times 1000$ $= 75000m\ell$ $75000 \div 125 \div 60 = 10$ $\frac{2}{5} = 10$ $\frac{1}{5} = 10 \div 2$ $= 5$ $\frac{5}{5} = 5 \times 5 = 25$ $125 \times 60 \times 25 = 187500cm^3$
Q11)	a) is / is b) $360 - 256 = 104$ $\frac{180 - 104}{2} = 38$ $38 - 16 = 22^\circ$
Q12)	a) $437 \div 3.80$ $= 115$  b) $150 \times 4.50 = 675$ $85 \times 4.20 = 357$ $675 - 357 = \$318$
Q13)	a) 2 : 5 b) 2 units = 30 $1 \text{ unit} = 30 \div 2$ $= 15$ $10 \text{ units} = 15 \times 10$ $= 150$ $150 - 30 = 120$
Q14)	$200 - 15 - 30 = 155$ $155\% = 341$ $1\% = 341 \div 155$ $= 2.2$

	$100\% = 2.2 \times 100$ $= \$220$
Q15)	<p>a) $1\text{part} = 4u$ $3\text{parts} = 4 \times 3$ $= 12u$ $12u - 1u = 11u$ $12 + 4 = 16$ $\text{Ans} = \frac{11}{16}$</p> <p>b) $11\text{units} = 264$ $1\text{unit} = 264 \div 11$ $= 24$ $16\text{units} = 16 \times 24$ $= 384$ $384 \times \\$5 = \\1920</p>
Q16)	<p>a) $\angle EKL = 90^\circ + 60^\circ$ $= 150^\circ$ $\angle KEJ = 180^\circ - 150^\circ$ $= 30^\circ$ $180^\circ - 30^\circ - 73^\circ = 77^\circ$</p> <p>b) $\angle JEM = 90^\circ - 30^\circ$ $= 60^\circ$ $\angle MKN = 180^\circ - 60^\circ - 44^\circ$ $= 76^\circ$</p>
Q17)	<p>a) $28 \times 2 = 56$ $\frac{1}{4} \pi d = \frac{1}{4} \times \frac{22}{7} \times 56$ $= 44$ $44 \times 5 = 220$ $\frac{1}{4} \times 4 \times \pi d = \frac{1}{2} \times 4 \times \frac{22}{7} \times 28$ $= 176$ $176 + 220 + (28 \times 2)$ $= 452\text{cm}$</p> <p>b) $(28 \times 28) \times 4 = 3136$ $\frac{1}{4} \times \frac{22}{7} \times 28 \times 28 = 616$ $3136 + 616 = 3752\text{cm}^2$</p>

TAO NAN SCHOOL PRELIM PAPER



Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
 For each question, four options are given. One of them is the correct answer.
 Make your choice (1, 2, 3 or 4).

Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(20 marks)

1. Round 324 456 to the nearest hundred.

- (1) 320 000
- (2) 320 060
- (3) 324 400
- (4) 324 500

2. Express 0.375 as a percentage.

- (1) 375%
- (2) 37.5%
- (3) 3.75%
- (4) 0.375%

3. Arrange these fractions in descending order.

$$\frac{11}{12}, \quad \frac{5}{6}, \quad \frac{3}{4}, \quad \frac{7}{9}$$

- (1) $\frac{3}{4}, \frac{5}{6}, \frac{7}{9}, \frac{11}{12}$
- (2) $\frac{11}{12}, \frac{7}{9}, \frac{5}{6}, \frac{3}{4}$
- (3) $\frac{3}{4}, \frac{7}{9}, \frac{5}{6}, \frac{11}{12}$
- (4) $\frac{11}{12}, \frac{5}{6}, \frac{7}{9}, \frac{3}{4}$

4. How many seconds are in $\frac{3}{5}$ hour?

- (1) 36
- (2) 60
- (3) 2160
- (4) 6000

5. $340 \times 2.2 = 340 \times \square \times 22$

What is the missing number in the box?

- (1) 1.00
- (2) 0.10
- (3) 0.01
- (4) 10.0

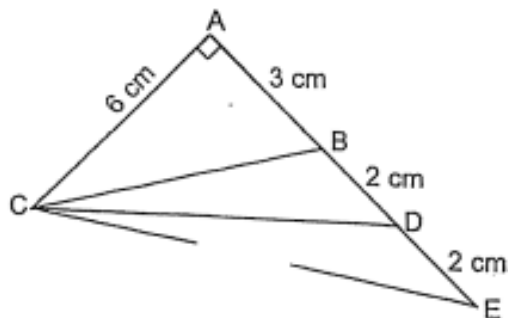
6. Ali, Eddy, Gabriel and Harish wanted to try go-kart driving. The driver has to be taller than 1.4 m. Who is able to drive the go-kart?

Name	Height
Ali	1 m 4 cm
Eddy	1 m 40 cm
Gabriel	1 m 5 cm
Harish	1 m 54 cm



- (1) Ali
- (2) Eddy
- (3) Gabriel
- (4) Harish

7. Which one of the triangles has an area of 12 cm^2 ?



- (1) Triangle ABC
 (2) Triangle BCD
 (3) Triangle BCE
 (4) Triangle ACD
8. Find the perimeter of the quarter circle. (Take $\pi = \frac{22}{7}$)

- (1) 33 cm
 (2) 75 cm
 (3) 132 cm
 (4) 174 cm



9. Jeff is facing north. He makes a $\frac{1}{4}$ -turn clockwise followed by $\frac{1}{2}$ -turn anticlockwise. From here, he makes a final turn to face south-east. Find the angle that he has to make for the final turn.

- (1) 135° anticlockwise
 (2) 45° anticlockwise
 (3) 135° clockwise
 (4) 45° clockwise

10. Study the table carefully.

Machine	Copies Printed	Duration (min)
A	120	3
B	180	4
C	220	4
D	240	5

Which machine printed the most number of copies per minute?

- (1) A
- (2) B
- (3) C
- (4) D

11. Matthew is thrice as old as his sister. In 5 years' time, their total age will be h years old. How old is his sister now?

- (1) $\left(\frac{h-5}{4}\right)$ years old
- (2) $\left(\frac{h-10}{4}\right)$ years old
- (3) $\left(\frac{h-15}{2}\right)$ years old
- (4) $\left(\frac{5h}{3}\right)$ years old

12. Mr Loh planted 120 pots of orchids and roses. $\frac{3}{5}$ of the pots were orchids. Among the roses, there was an equal number of pots of red and pots of yellow roses. How many pots of yellow roses were there?

- (1) 20
- (2) 24
- (3) 36
- (4) 80

13. The average age of 3 dogs was 12 years old. The age of each dog was different. The youngest dog was 8 years old. Which one of the following was a possible age of the oldest dog?

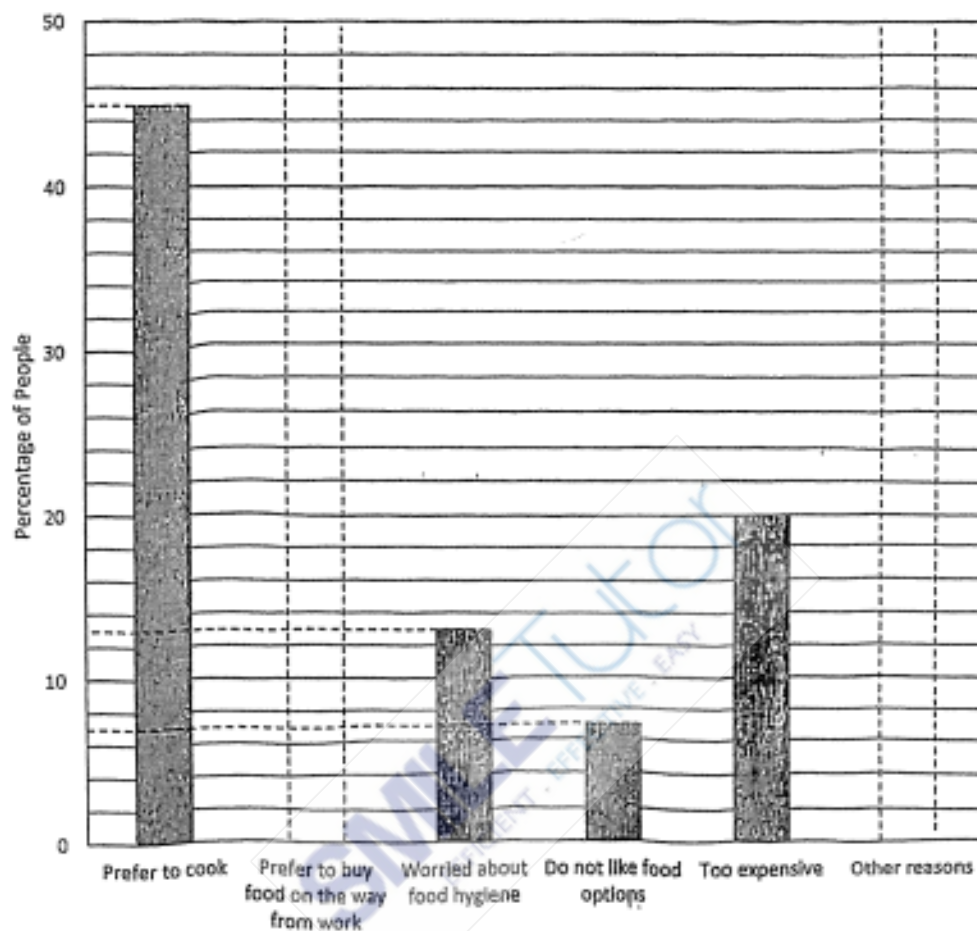
- (1) 15
- (2) 14
- (3) 13
- (4) 12

14. The ratio of the area of Rectangle A to the shaded area of Rectangle A is 7 : 2. The ratio of the area of Rectangle B to the unshaded area of Rectangle B is 5 : 2. Find the ratio of the unshaded area of Rectangle A to the area of the whole figure.



- (1) 1 : 2
- (2) 1 : 7
- (3) 3 : 5
- (4) 3 : 7

15. The bar graph shows the reasons for people not using online food delivery platforms.



The percentage of people who preferred to buy food on the way home from work was twice the percentage of people who gave other reasons. Find the percentage of people who gave other reasons.

- (1) 15
- (2) 10
- (3) 5
- (4) 4

End of Booklet A
Go on to Booklet B

Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided.
 For questions which require units, give your answers in the units stated. (5 marks)

16. Express $7\frac{3}{25}$ as a decimal.

Ans: _____

17. Debbie bought a calculator and a printer at Great Store. She was given a 10% discount for both items. How much did she pay for both items?



Usual Price
\$25



Usual Price
\$95

Ans: \$ _____

18. Tammy recorded the following temperatures for 2 days.

Day 1	30°C
Day 2	24°C

Find the percentage change in the temperature for Day 2.

Ans: _____ %

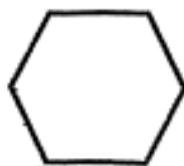
19. Find the maximum number of 2-cm cubes that can be put into a box measuring 10 cm by 8 cm by 5 cm.

Ans: _____

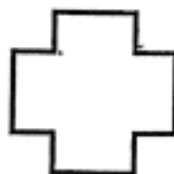
20. Which one of the following shapes has the greatest number of lines of symmetry?



(A)



(B)



(C)



(D)

Ans: _____

Questions 21 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

21. Find the value of the following when $k = 3$.

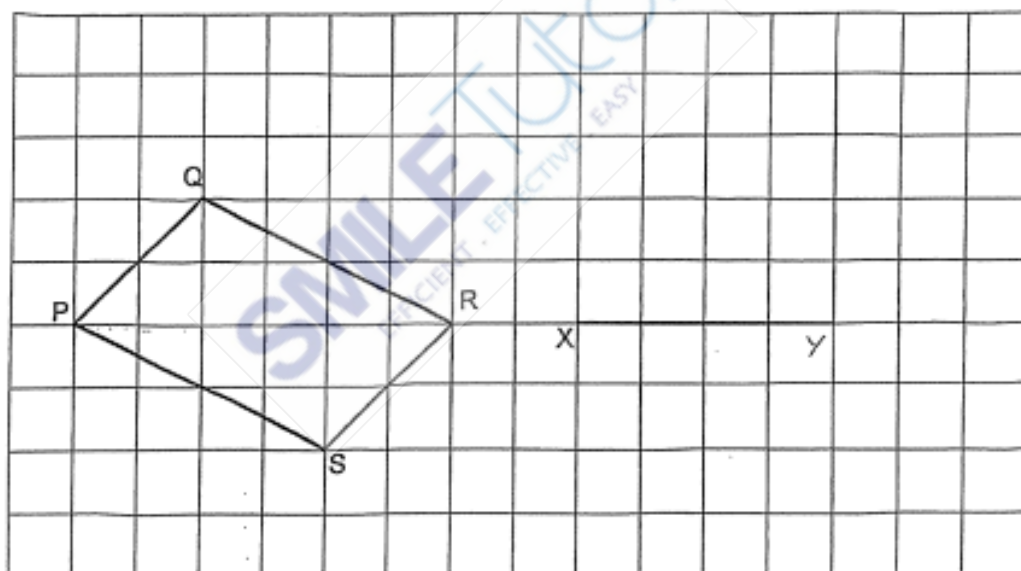
(a) $15 + 2k$

Ans: (a) _____

(b) $k - \frac{5}{9}$

Ans: (b) _____

22. A parallelogram PQRS is drawn on a square grid.

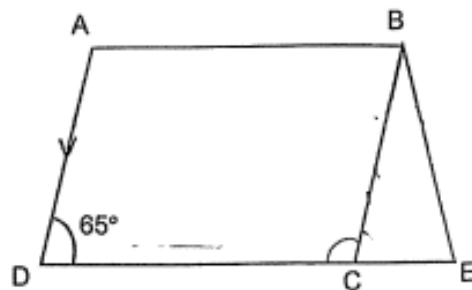


Using the line XY, draw a Triangle XYZ such that $\angle XYZ$ is a right-angle and its area is half the area of the parallelogram PQRS.

Measure $\angle ZXY$.

Ans: _____°

- 23 The figure below is not drawn to scale. Triangle BCE is an isosceles triangle. BC is parallel to AD. DCE is a straight line.



(a) Find $\angle DCB$.

Ans: (a) _____°

(b) Find $\angle CBE$.

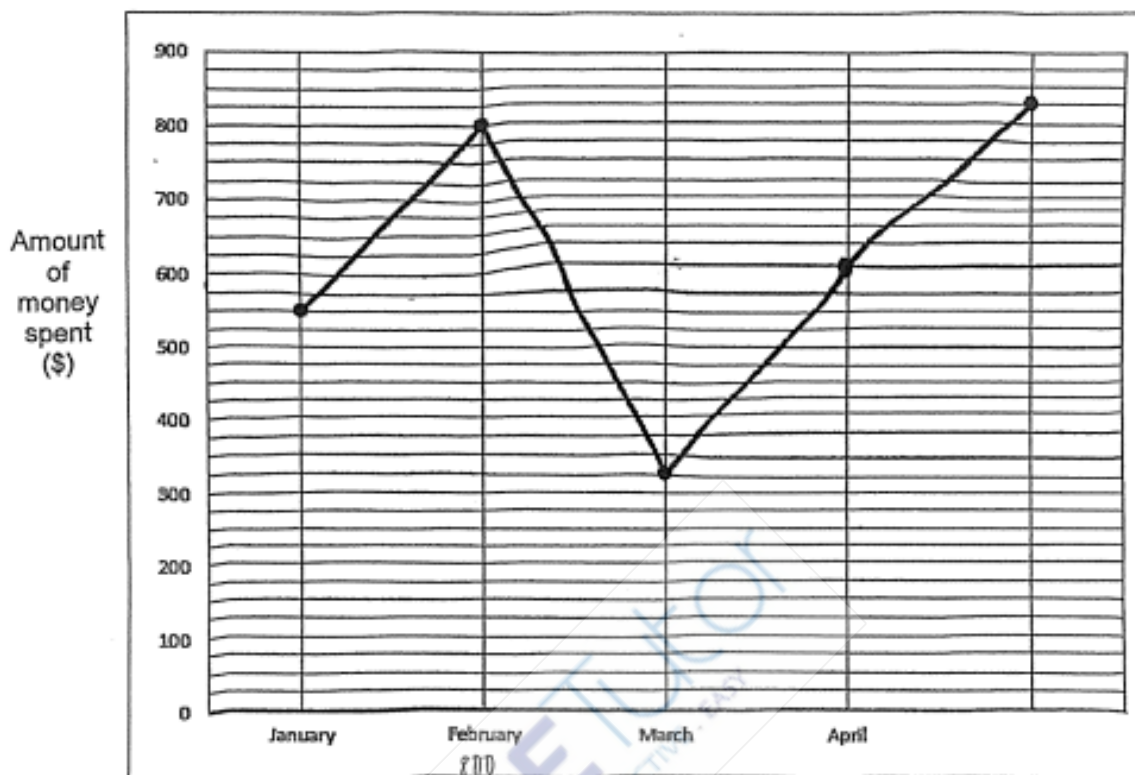
Ans: (b) _____°

24. In the equation below, the ones digits of the 2 numbers are not shown. The sum of the 2-digit numbers is 180. The difference between them is the greatest possible. What are the 2 numbers?

$$8 \text{ * } + 9 \text{ * } = 180$$

Ans: _____ & _____

25. The line graph shows the amount of money Jackie spent from January to May.



- (a) Find the increase in the amount of money spent between January and February.

Ans: (a) \$ _____

- (b) Between which 2 months was there the greatest increase in the amount of money Jackie spent?

Ans: (b) Between _____ and _____

26. Tom and Jerry took a 10-minute Mathematics quiz. They started and ended the quiz at the same time. Tom answered 2 questions more than Jerry for every minute. Together, they answered 58 questions. How many questions did Jerry answer?

Ans: _____

27. The solid is made up of 2-cm cubes glued together as shown. It was painted in red on all sides.



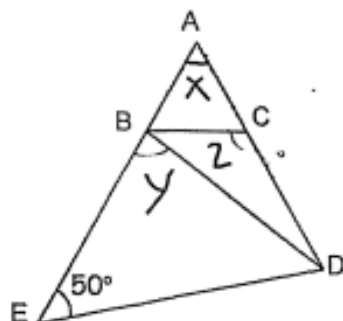
- (a) What is the area of one face of a cube?

Ans: _____ cm^2

- (b) How many faces were painted red?

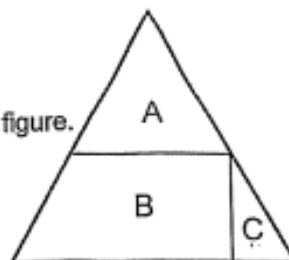
Ans: _____

28. Triangle ABC is an equilateral triangle. ABE and ACD are straight lines. BD = BE. Find the ratio of $\angle x$ to $\angle y$ to $\angle z$.



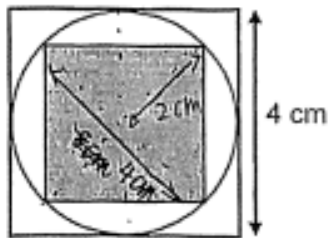
Ans: _____

29. The area of A is 5 times the area of C.
 The area of B is $1\frac{2}{5}$ times the area of A.
 Express the area of A as a fraction of the whole figure.



Ans: _____

30. The figure is made up of a circle and 2 squares. The circle touches each of the 2 squares as shown. Find the shaded area.



Ans: _____ cm^2

End of Booklet B
End of Paper 1

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

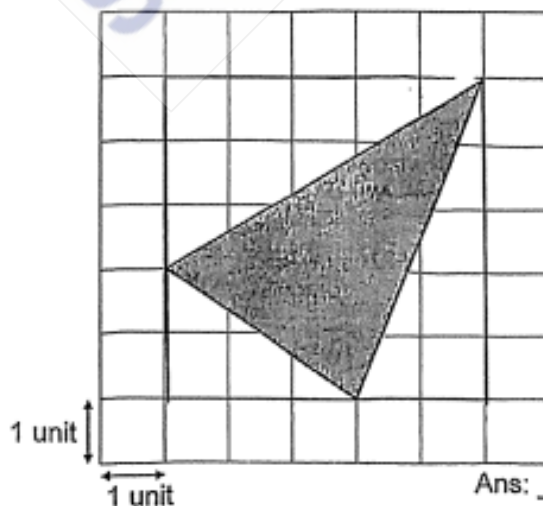
1. Mr Loh buys 10 kg of rice. He packs $\frac{2}{5}$ of the rice into smaller bags. The mass of each smaller bag of rice is $\frac{1}{4}$ kg. How many smaller bags of rice are there?

Ans: _____

2. The ratio of Amal's money to Bill's money is 5 : 3. Amal spends $\frac{1}{3}$ of her money. What is the new ratio of Bill's money to Amal's remaining money?

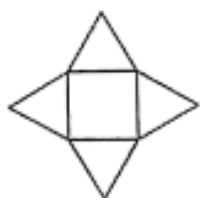
Ans: _____

3. Find the area of the shaded triangle.

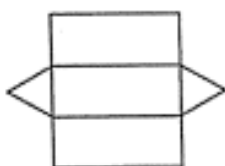


Ans: _____ unit²

4. Match each net of solid to the correct solid formed.



•



•

•



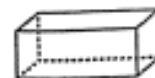
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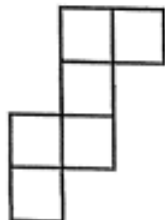


5. Chandra bought 7 stamps at n cents each. He paid with a five-dollar note. How much change did he receive?

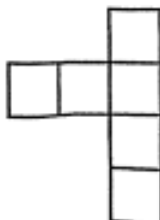
Ans: \$ _____

For questions 6 to 17, show your working clearly in the space provided for each question and write your answers in the spaces provided.
 The number of marks available is shown in brackets [] at the end of each question or part-question. (45 marks)

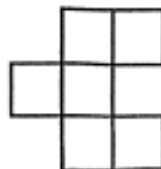
6. (a) Which one of the following shows a net of a cube?



Net A



Net B



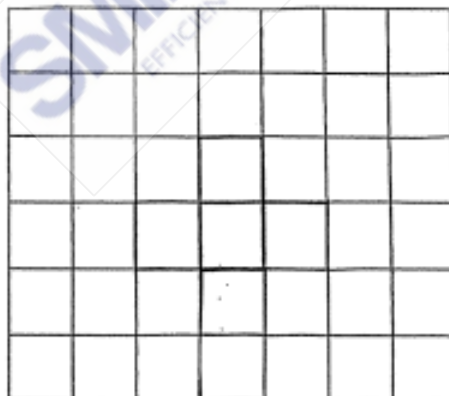
Net C



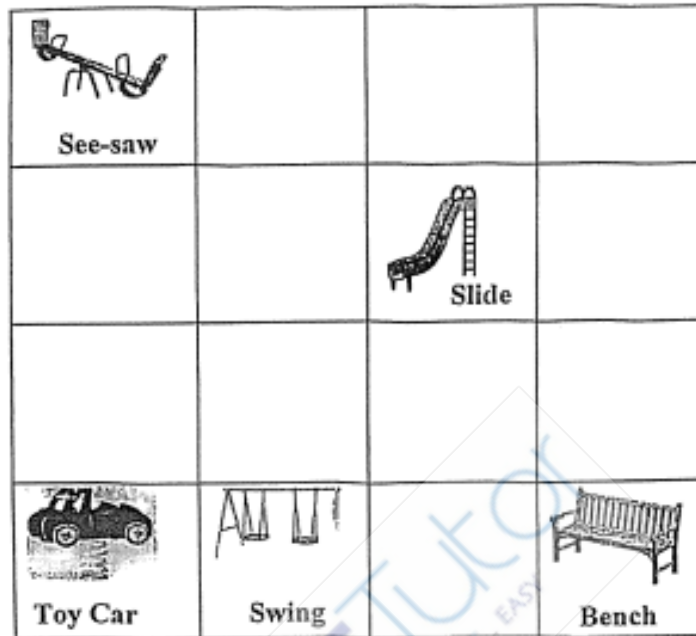
Net D

Ans: (a) _____ [1]

- (b) Complete the following net of a cube such that it has one line of symmetry. [2]



7. The square grid below shows the plan of a playground.



- (a) Is what direction is the bench from the see-saw?

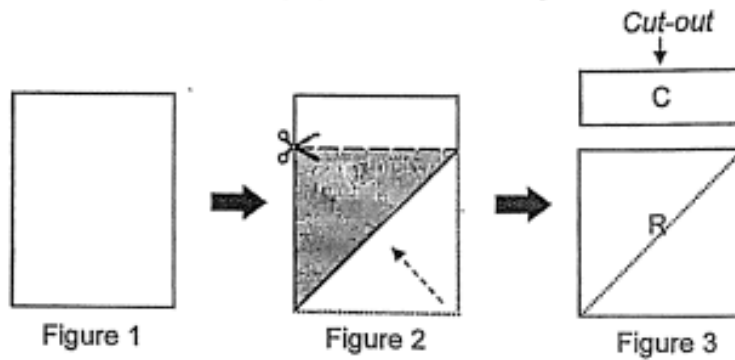
Ans: (a) _____ [1]

- (b) A tree is to be planted in the playground.
 The location of the tree is to be north-west of the bench and south of the slide and.
 Put a tick () in the square where the tree will be planted. [1]

- (c) The toy car is south-west of the _____ .

Ans: (c) _____ [1]

8. Figure 1 shows a rectangular piece of paper.
 The ratio of its length to its breadth is 4 : 3.
 In Figure 2, the piece of paper is folded and cut along the dotted line.
 Figure 3 shows the cut-out, C, and the remaining area of paper, R.



- (a) What is the ratio of the length to the breadth of C?

Ans: (a) _____ [1]

- (b) What percentage of the area of C is the area of R?

Ans: (b) _____ [2]

9. Ella wrote her composition in 45 minutes. Fandi completed his composition 5 minutes faster than Ella. Ella wrote an average of 24 words per minute. Their compositions had a total of 2000 words. What was the average number of words Fandi wrote per minute?

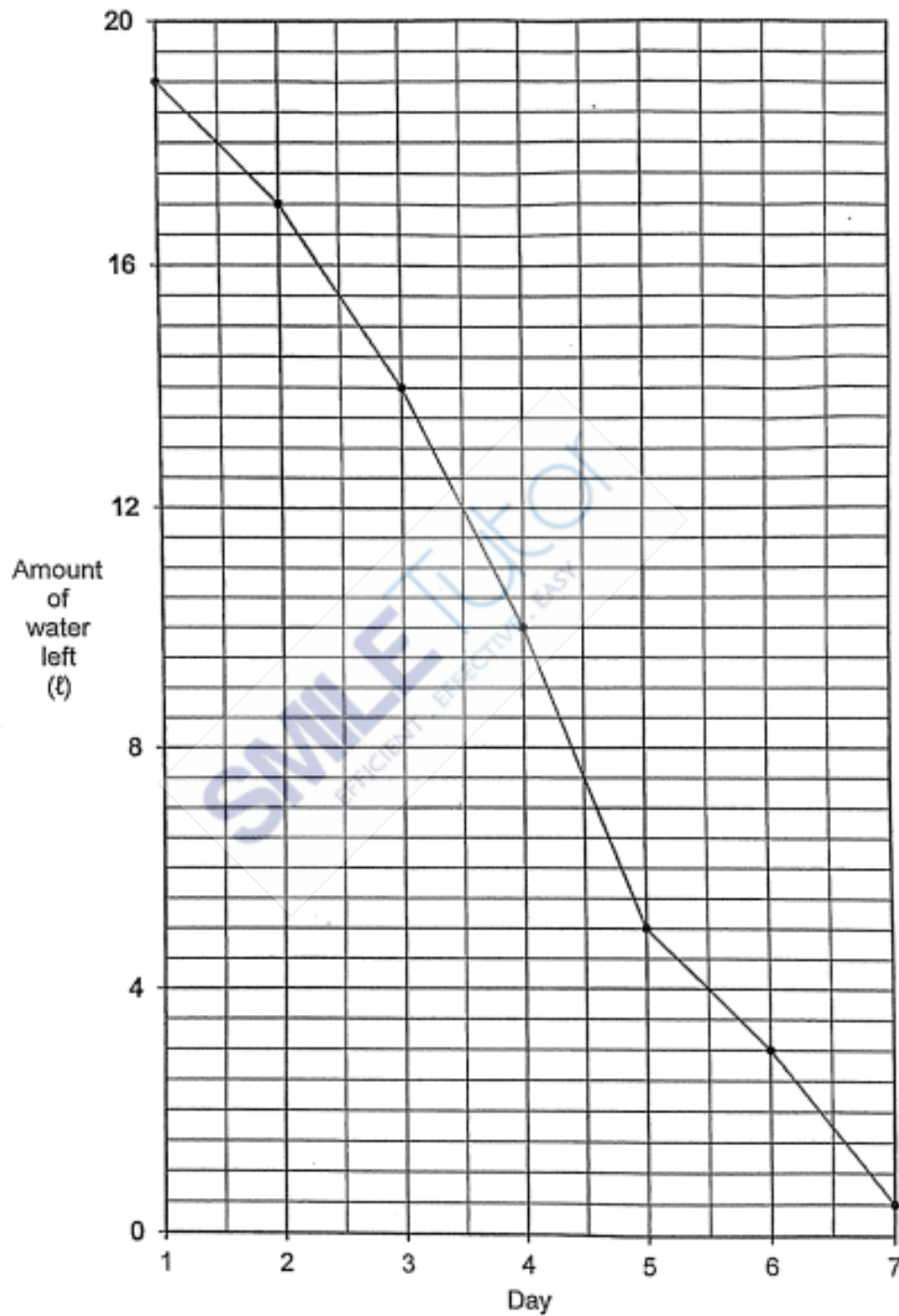
Ans: _____ [3]

10. Glen was 40 m away from home. He and his brother, John, were 10 m apart when they started running home at the same time. Glen ran at an average speed of 5 m/s while John, ran at an average speed of 8 m/s. What was the distance between the brothers when one of them reached home first?



Ans: _____ [3]

11. The line graph shows the amount of water left in a water dispenser at the start of each day from Day 1 to 7.



(11a) How much water is left in the container at the end of Day 6?

Ans: (a) _____ [1]

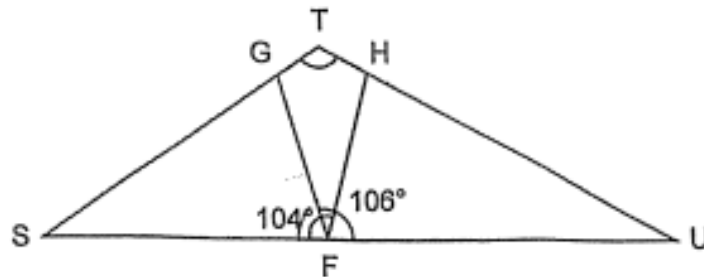
(11b) The amount of water dispensed for two days was the same.
Which were the two days?

Ans: (b) Day ____ and Day ____ [1]

(11c) What was the average amount of water dispensed from the start of Day 1 to the end of Day 5?

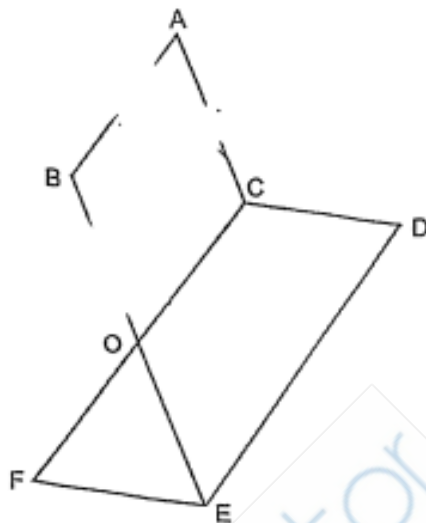
Ans: (c) _____ [2]

- 12a. In the figure, STU is a triangle. F, G and H are points on the triangle. $SF = SG$ and $UF = UH$. $\angle HFS = 104^\circ$ and $\angle UFG = 106^\circ$. Find $\angle STU$.



Ans: _____ [2]

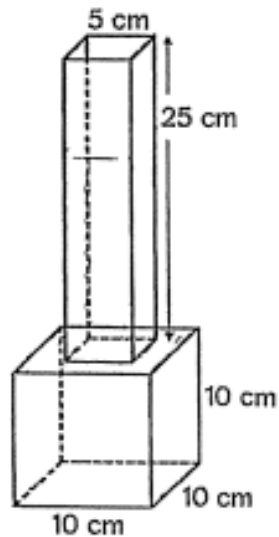
12b. In the figure, ACOB is a rhombus and CDEF is a parallelogram.



Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick () to indicate your answer.

Statement	True	False	Not possible to tell	
i) $\angle ABO$ is twice of $\angle OFE$				[1]
ii) $\angle ACD$ is equal to $\angle BOF$				[1]

13. The figure shows an empty vase that is made from 2 containers. The bottom container is a cube of side 10 cm. The top container is a cuboid with a square base of 5 cm and a height of 25 cm. 1465 cm^3 of water is poured into the empty vase. Find the height of the water level from the base of the vase.



Ans: _____ [5]

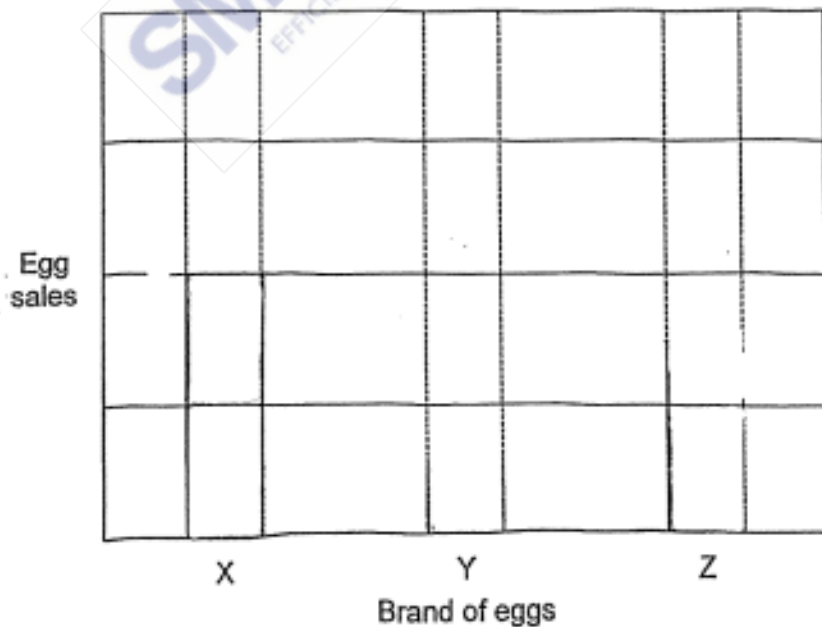
14. The table shows some information on three brands of eggs.

Brand	Cost per carton of eggs	Number of cartons of eggs sold in a week
X	\$5.60	240
Y	\$3.20	315
Z	\$2.80	120

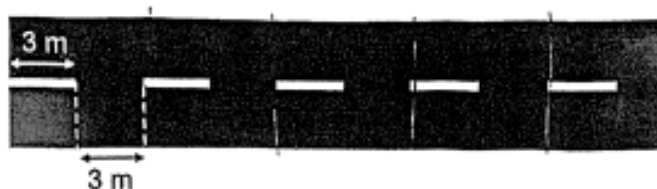
- (a) How much money was collected from the sale of the 3 brands of eggs in a week?

Ans: (a) _____ [2]

- (b) Complete the bar graph to show the proportion of the amount of money collected for each brand of eggs in a week. Shade the bars. [2]



15. The figure shows the start of an 11-km road with white lane markings. One fully painted white lane marking is 3 m long. It is as long as the distance between two fully painted white lane markings.



- (a) Find the maximum number of fully painted white lane markings.

Ans: (a) _____ [2]

- (b) What is the length of the last white lane marking that is not fully painted?

Ans: (b) _____ [2]

- (c) What fraction of a fully painted white lane marking is the last white lane marking?

Ans: (c) _____ [1]

16. A baker made 225 fewer cheese buns than kaya buns.
He sold half of the cheese buns and $\frac{7}{9}$ of the kaya buns.
There were 128 buns left in the end.
How many buns did he sell?



Ans: _____ [4]

17. Two identical wheels with centres P and Q are 264 cm apart. Figure 1 shows the wheels turn along straight line CD towards each other.

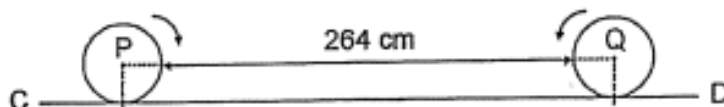


Figure 1

After each wheel makes 6 complete turns, they touch each other as shown in Figure 2.



Figure 2

- (a) What is the radius of each wheel?

Ans: (a) _____ [2]

- (b) Find the perimeter of the shaded part in Figure 2. (Take $\pi = \frac{22}{7}$)

Ans: (b) _____ [2]

End of Paper 2

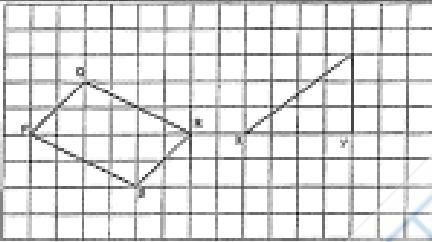
Answer Sheet



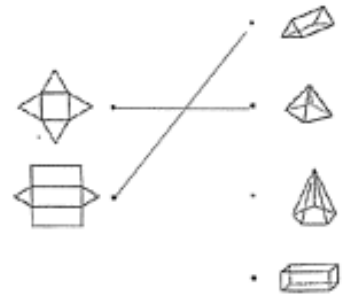
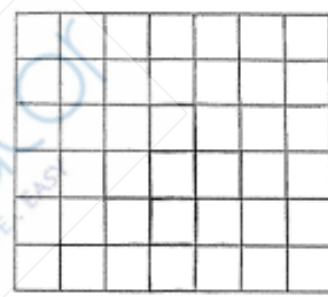
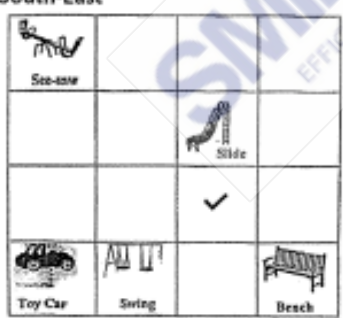
BOOKLET A (PAPER 1)

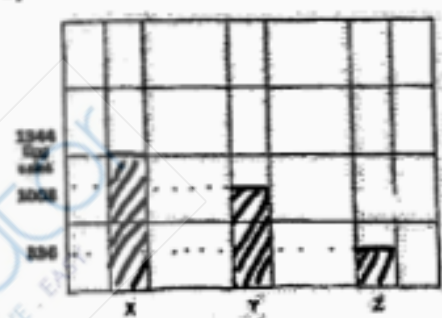
Q1. 4	Q2. 2	Q3. 4	Q4. 3	Q5. 2
Q6. 4	Q7. 3	Q8. 2	Q9. 1	Q10. 3
Q11. 2	Q12. 2	Q13. 1	Q14. 3	Q15. 3

BOOKLET B (PAPER 1)

Q16	7.12	Q17	108
Q18	20%	Q19	40
Q20	D	Q21	a) 21 b) $2\frac{4}{9}$
Q22		Q23	a) $\angle DCB = 180^\circ - 65^\circ = 115^\circ$ b) $\angle BCE = 180^\circ - 115^\circ = 65^\circ$ $\angle CBE = 180^\circ - 65^\circ - 65^\circ = 50^\circ$
Q24	99 & 81	Q25	a) 250 b) March and April
Q26	19	Q27	a) 4 cm^2 b) 26
Q28	3:6:4	Q29	$\frac{5}{13}$
Q30	8 cm^2		

PAPER 2

Q1	$10 \times \frac{2}{5} = 4$ $4 \div \frac{1}{4} = 16$	Q2	9:10
Q3	$\Delta A = \frac{1}{2} \times 3 \times 5 = 7.5$ $\Delta B = \frac{1}{2} \times 2 \times 5 = 5$ $\Delta C = \frac{1}{2} \times 2 \times 3 = 3$ $5 \times 5 = 25$ $\Delta D = 25 - 7.5 - 5 - 3 = 9.5$	Q4	
Q5	$7 \times n = 7n¢$ $\$5 - 7n¢ = \$5 - \frac{7n}{100} = \$\left(5 - \frac{7n}{100}\right)$	Q6	a) A b) 
Q7	a) South-East  b) c) Slide	Q8	a) 3:1 b) $3 \times 1 = 3$ $3 \times 3 = 9$ $\frac{9}{3} \times 100\% = 300\%$
Q9	$45 - 5 = 40$ $24 \times 45 = 1080$ $2000 - 1080 = 920$ $920 \div 40 = 23$	Q10	$40 \div 5 = 8$ $10 + 40 = 50$ $50 \div 8 = 6\frac{1}{4}$ $5 \times 6\frac{1}{4} = 31\frac{1}{4}$ $40 - 31\frac{1}{4} = 8\frac{3}{4} \text{ m}$

Q11	a) 0.5¢ b) Day 1 and Day 5 c) 3.2 ¢	Q12	a) $\angle HFU = 180^\circ - 104^\circ = 76^\circ$ $\angle HUF = 180^\circ - 76^\circ - 76^\circ = 28^\circ$ $\angle GFS = 180^\circ - 106^\circ = 74^\circ$ $\angle GSF = 180^\circ - 74^\circ - 74^\circ = 32^\circ$ $\angle STU = 180^\circ - 28^\circ - 32^\circ = 120^\circ$ b) i) True ii) Not possible to tell												
Q13	$10 \times 10 \times 10 = 1000$ $1465 - 1000 = 465$ $5 \times 5 = 25$ $465 \div 25 = 18.6$ $18.6 + 10 = 28.6 \text{ cm}$	Q14	a) $5.60 \times 240 = 1344 \text{ (x)}$ $3.20 \times 315 = 1008 \text{ (y)}$ $2.80 \times 120 = 336$ $1344 + 1008 + 336 = \$2688$ b) <div style="text-align: center;">  <p>Number of eggs.</p> </div>												
Q15	a) $11\text{km} = 10000\text{m}$ $2 \times 3 = 6$ $11000 \div 6 = 1833 \text{ R } 2$ $1833 \times 1 = 1833$ b) $11000 \div 6 = 1833 \text{ R } 2$ 2m c) $\frac{2}{3}$	Q16	<table style="margin-left: auto; margin-right: auto;"> <tr> <th></th> <th>Cheese</th> <th>Kaya</th> </tr> <tr> <td>Before</td> <td>18u</td> <td>18u + 225</td> </tr> <tr> <td>Change</td> <td>-9u</td> <td>-14u - 175</td> </tr> <tr> <td>After</td> <td>9u</td> <td>4u + 50</td> </tr> </table> $2 \times 9 = 18$ $9u + 4u + 50 = 128$ $13u = 78$ $u = 78 \div 13 = 6$ $9u + 4u + 175 = 23u + 175 = 23 \times 6 + 175 = 313$		Cheese	Kaya	Before	18u	18u + 225	Change	-9u	-14u - 175	After	9u	4u + 50
	Cheese	Kaya													
Before	18u	18u + 225													
Change	-9u	-14u - 175													
After	9u	4u + 50													
Q17	a) $2 \times 6 = 12$ $264 \div 12 = 22$ $\frac{22}{7} \times D = 22$ $D = 7\text{cm}$ $R = 7 \div 2 = 3.5\text{cm}$ b) $D = 7\text{cm}$ $\frac{1}{2} \times \frac{22}{7} \times 7 = 11$ $11 + 7 = 18\text{cm}$														

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