ROSYTH SCHOOL
2023 PRELIMINARY EXAMINATION
MATHEMATICS
PRIMARY 6
PAPER 1

Name: _____ Register No. _____

Class: Pr 6 -_____

Date: 22 August 2023 Parent's Signature: _____

Total Time for Booklets A and B : 1 hour

BOOKLET A

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Shade your answers in the Optical Answer Sheet (OAS) provided.
4. You are **not** allowed to use a calculator.
5. Answer all questions.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet A)	20	

* This booklet consists of **8** pages (including this cover page).

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)

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1. Round 8.685 to 2 decimal places.

   (1) 8.60
   (2) 8.68
   (3) 8.69
   (4) 8.70

2. Simplify $8a + 21 - 7 - 4a$

   (1) 4a + 14
   (2) 4a + 28
   (3) 12a + 14
   (4) 12a + 28

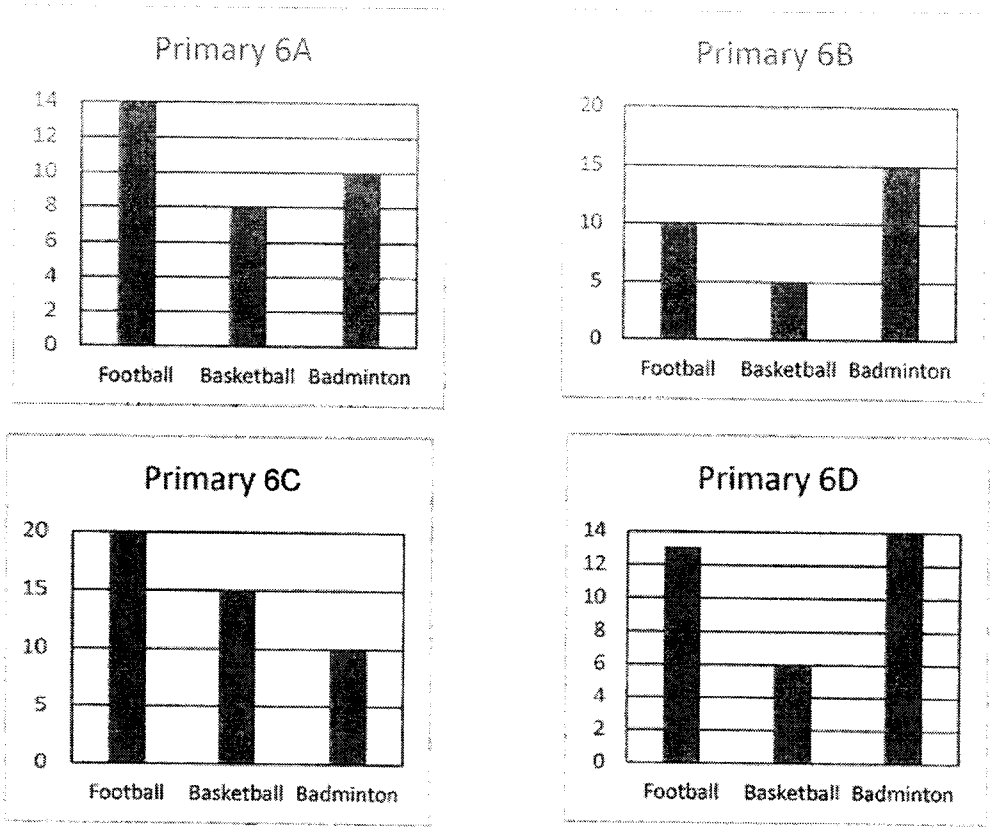
3 Which of the following is the same as 2050 cm?

   (1) 2 m 5 cm
   (2) 2 m 50 cm
   (3) 20 m 5 cm
   (4) 20 m 50 cm

(Go on to the next page)

Use the information given below to answer Questions 4 and 5.

Alynna conducted a survey of the favourite sport of the students in 4 classes. The results are shown below.



4 Which of the classes above has the greatest number of students choosing Football?

(1) Primary 6A
(2) Primary 6B
(3) Primary 6C
(4) Primary 6D

5. In these 4 classes, how many more students choose Badminton as compared to Basketball?

(1) 15
(2) 25
(3) 34
(4) 49

(Go on to the next page)

6. After traveling for 2 hours and 15 minutes, a train arrived in Kuala Lumpur from Singapore at 6.15 p.m. At what time did the train leave Singapore?

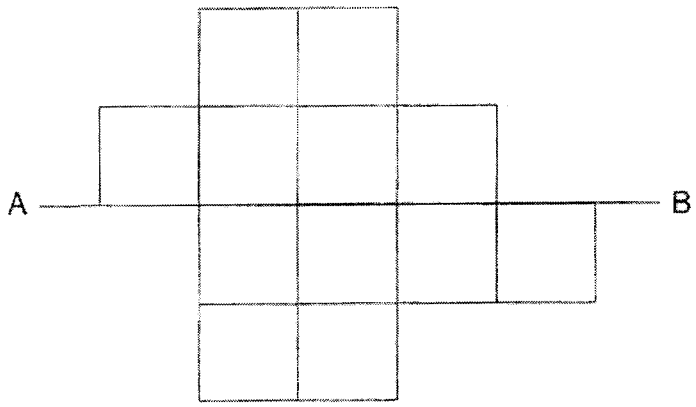
(1) 3.45 p.m.

(2) 4.00 p.m.

(3) 4.15 p.m.

(4) 8.30 p.m.

7. The figure below shows 12 identical squares. What is the least number of such squares that must be added to the figure so that the line AB becomes a line of symmetry?



(1) 1

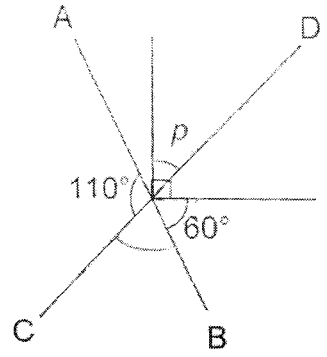
(2) 2

(3) 3

(4) 4

(Go on to the next page)

8 In the figure below, AB and CD are straight lines. Find $\angle p$.



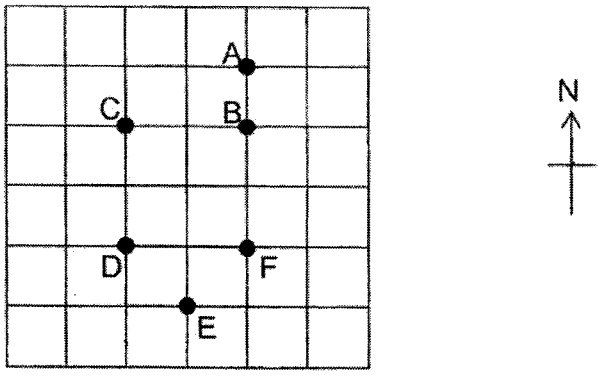
(1) 40°

(2) 45°

(3) 50°

(4) 70°

Refer to the square grid below and answer question 9.



9. Which of the following statements is TRUE of the diagram shown above?

(1) Point E is north-east of Point F

(2) Point D is north-east of Point E

(3) Point D is north-east of Point B

(4) Point F is north-east of Point E

(Go on to the next page)

10. The postage rate for sending letters to Japan is shown below.

Postage Rate	
First 20 g	$0.80
Per additional 10 g or part thereof	$0.25

Mrs Tan sent a letter weighing 38 g to Japan. How much did she pay for the postage?

(1) $1.00
(2) $1.05
(3) $1.30
(4) $1.60

11. Mr Tan has 200 g of sugar. He wants to pack the sugar into 1000 packets equally. What is the mass of each packet of the sugar?

(1) 0.02 g
(2) 0.2 g
(3) 50 g
(4) 5 g

(Go on to the next page)

12. Eddie bought a card and a sunflower for $8.20. Jane bought a card and 2 sunflowers for $14. How much did a card cost?

(1) $2.40

(2) $5.80

(3) $11.60

(4) $22.20

13. Ansen and Beirul drank all the water in a bottle of water. Ansen drank 100 ml more than $\frac{3}{8}$ of the total amount of water in the bottle. Beirul drank 250 ml. How much water was there in the bottle of water at first?

(1) 150 ml

(2) 240 ml

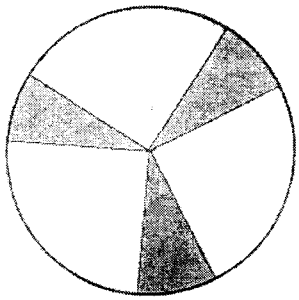
(3) 350 ml

(4) 560 ml

(Go on to the next page)

14. Three parts of a circle with a radius of 14 cm is shaded. These three parts add up to a quarter of the circle. What is the total perimeter of the three shaded parts?

Take $\pi = \frac{22}{7}$



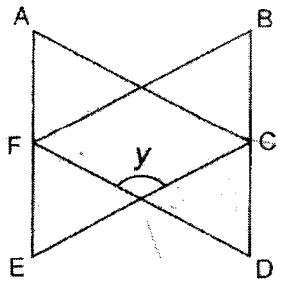
(1) 22 cm

(2) 50 cm

(3) 95 cm

(4) 106 cm

15. ACE and BDF are equilateral triangles. AF = FE and BC = CD.
Find $\angle y$ in the figure.



(1) 60°

(2) 90°

(3) 120°

(4) 240°

Go on to Booklet B

ROSYTH SCHOOL
2023 PRELIMINARY EXAMINATION
MATHEMATICS
PRIMARY 6
PAPER 1

Name: _____ Register No. _____

Class: Pr 6 -_____

Date: 22 August 2023 Parent's Signature: _____

Total Time for Booklets A and B : 1 hour

BOOKLET B

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. Use a dark blue or black ballpoint pen to write your answers in the space provided for each question.
5. Do not use correction fluid/tape or highlighters.
6. You are **not** allowed to use a calculator.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet B)	25	

* This booklet consists of **10** pages (including this cover page).

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.

Do not write in this space

All diagrams in this paper are not drawn to scale unless stated otherwise.

(5 marks)

16. Find the value of $10 \times (24 + 36 \div 6)$.

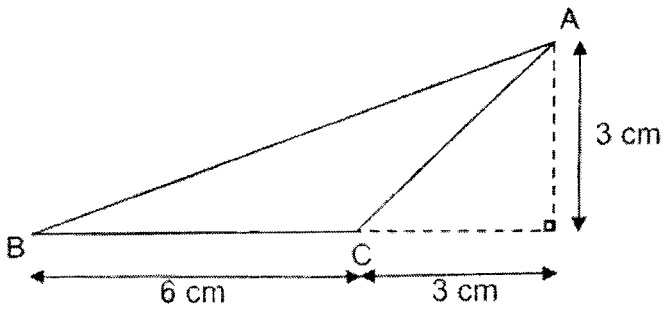
Ans: _____

17. The table below shows the mark Chelsie scored for 3 tests. What is the average mark she scored for these 3 tests?

Test 1	Test 2	Test 3
37	48	44

Ans: _____

18. Find the area of triangle ABC.

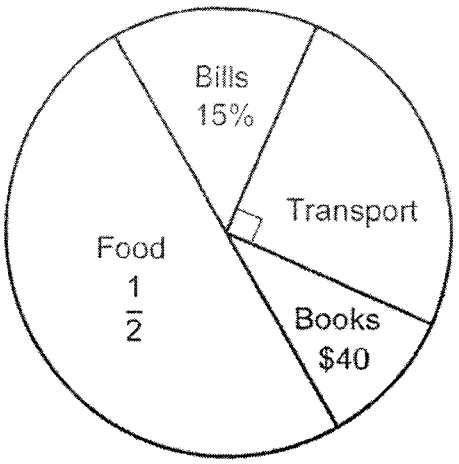


Ans: _____ cm^2

(Go on to the next page)

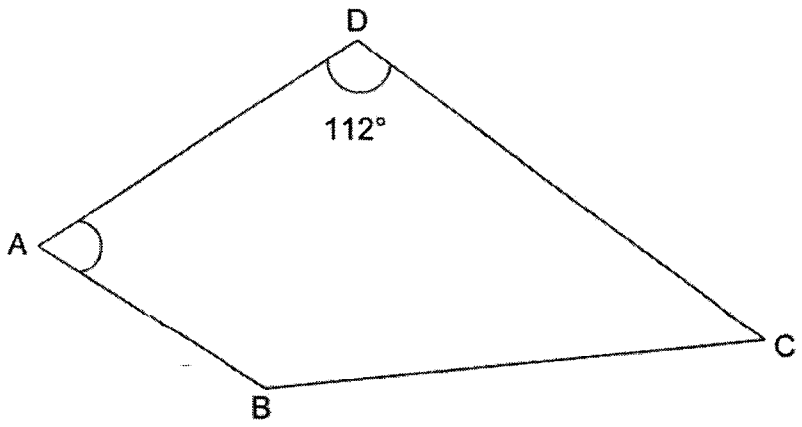
19. The pie chart shows Natalie's expenditure last month. How much did she spend on food?

Do not write in this space



Ans: $ _____

20. ABCD is a trapezium with AB parallel to DC. ∠ADC = 112°.
Find ∠BAD.



Ans: _____ °

(Go on to the next page)

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.

Do not write in this space

All diagrams in this paper are not drawn to scale unless stated otherwise.

(20 marks)

21. Using all the digits 4, 9, 0, 5, form:

(a) the smallest 4-digit number that is a multiple of 5.

Ans: (a) _____

(b) a 4-digit number closest to 5000.

Ans: (b) _____

22. Dave had more money than Jerry. After Dave gave Jerry $140, they have the same amount of money. How much more money did Dave have than Jerry at first?

Ans: $ _____

(Go on to the next page)

23. Mr Fong bought a box of markers. $\frac{1}{7}$ of the markers were black. $\frac{1}{3}$ of the remaining markers were red and the rest were green. There were 400 green markers, how many markers did Mr Fong buy altogether?

Do not write in this space

Ans: _____

24. Uncle John sold $(p + 4)$ muffins on Monday. He sold $2p$ more muffins on Tuesday than on Monday. Altogether, he sold 240 muffins on the two days. Find the value of p.

Ans: _____

(Go on to the next page)

25. The table below shows the favourite subject of the students in Primary 6C. It is used to draw the pie chart shown. Mathematics is the most favourite subject amongst the students. Some parts of the table have been blanked off.

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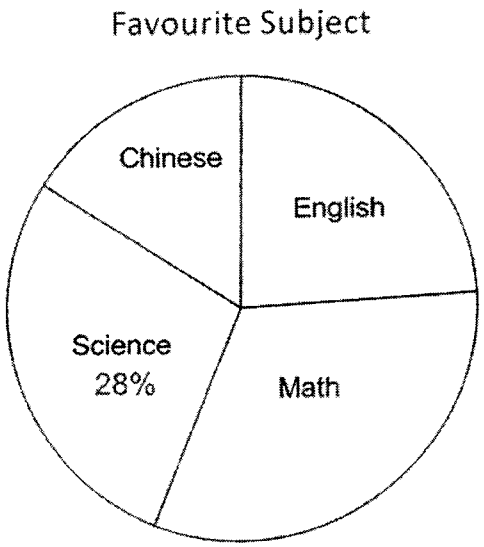
English		Science	
12	16		8



How many students chose Science as their favourite subject?

Ans: _____

(Go on to the next page)

26. Two squares of different sizes are drawn as shown below. An unshaded square is formed where the 2 squares overlap each other. The difference between the area of the shaded part A and the area of the shaded part B is 24 cm^2. Find the area of the unshaded part.

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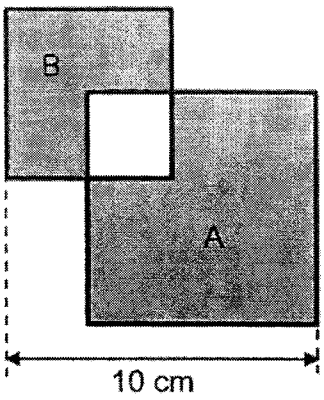

Ans: _____ cm^2

(Go on to the next page)

27. The solid is made up of nine 1-cm cubes.

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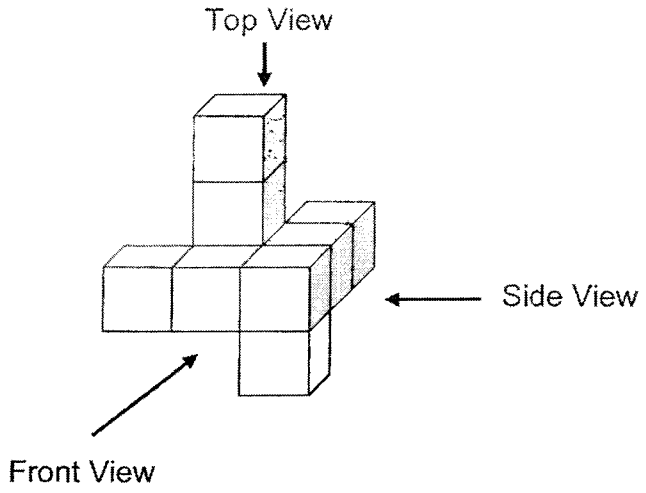
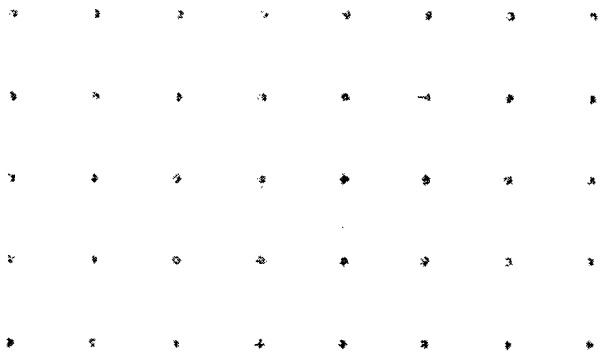


(a) Draw the top view of the solid on the grid below.

Top View



(b) Find the greatest number of cubes that can be added to the solid without changing the top view and the side view.

Ans: _____

(Go on to the next page)

28. (a) Complete the net of the solid figure in the grid below.

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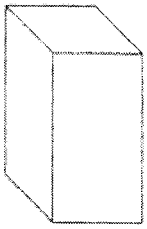
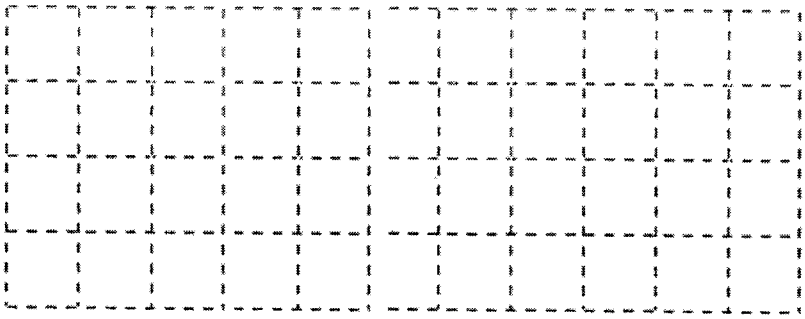
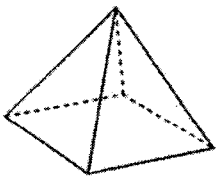
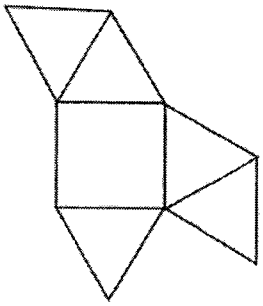




(b) The net of the solid figure has an extra face. Identify the extra face and put a cross (X) over it.

Solid Figure	Net - Put a (X) over the extra face
	

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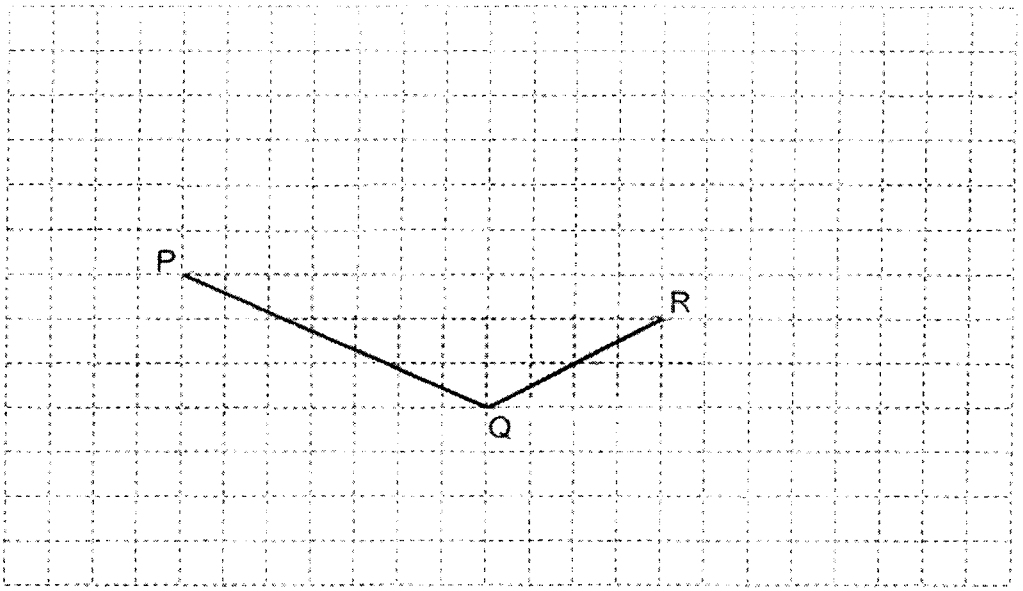
29. PQ and QR are two sides of a parallelogram.

(a) Complete the drawing of the parallelogram PQRS.

(b) QR also forms one side of an isosceles triangle QRT in which QR = RT and ∠QRT is an obtuse angle. Complete the drawing of the triangle QRT within the grid.



30. $2 is paid for every box sealed. Mrs Lee can seal 12 boxes in 3 hours. How much will Mrs Lee get in a full week (including Saturday and Sunday) if she spends 6 hours each day sealing boxes?

Ans: $ _____

End of paper
Have you checked your work?

ROSYTH SCHOOL
2023 PRELIMINARY EXAMINATION
MATHEMATICS
PRIMARY 6
PAPER 2

Name: _____ Register No. _____

Class: Pr 6 - _____

Date: 22 August 2023 Parent's Signature: _____

Time: 1 h 30 min

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. Use a dark blue or black ballpoint pen to write your answers in the space provided for each question.
5. Do not use correction fluid/tape or highlighters.
6. The use of an approved calculator is allowed.

Questions	Maximum Mark	Marks Obtained
Q 1 to 5	10	
Q 6 to 17	45	

Section	Maximum Mark	Marks Obtained
Paper 1	45	
Paper 2	55	
Total	**100**	

* This booklet consists of **18** pages (including this cover page)

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.

Do not write in this space

1. 13 pots of plants are arranged in a row of equal distance apart. The distance between the first pot of plant and the fifth pot of plant is $1\frac{3}{4}$ m. What is the distance between the 2nd pot of plant and the 12th pot of plant?

Ans: _____ m

2. A tray of cookies is arranged in 3 rows. Each row has p more cookies than the row in front of it. There are $5p$ cookies in the last row. How many cookies are there in the front row? Give your answer in terms of p in the simplest form.

Ans: _____

(Go on to the next page)

3. A strip of paper 60 cm long is folded to form the shape shown below.

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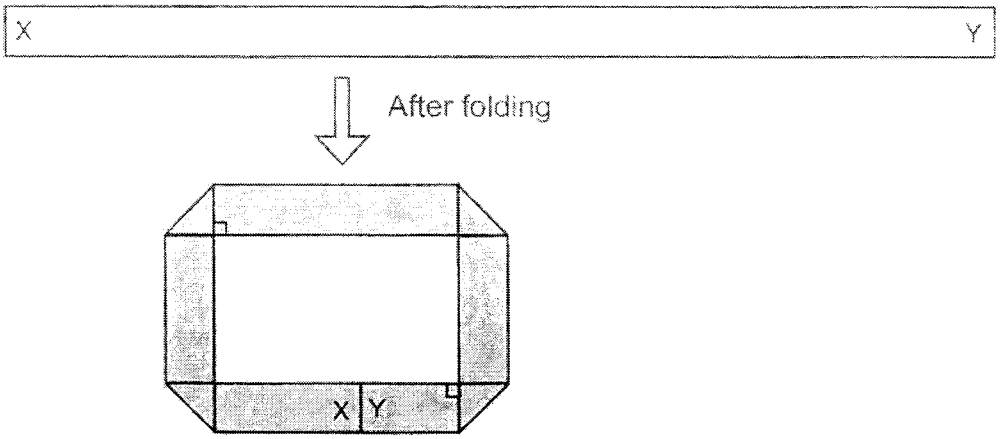


The difference in area between the strip of paper and the folded strip is 18 cm^2. Find the area of the shaded folded strip.

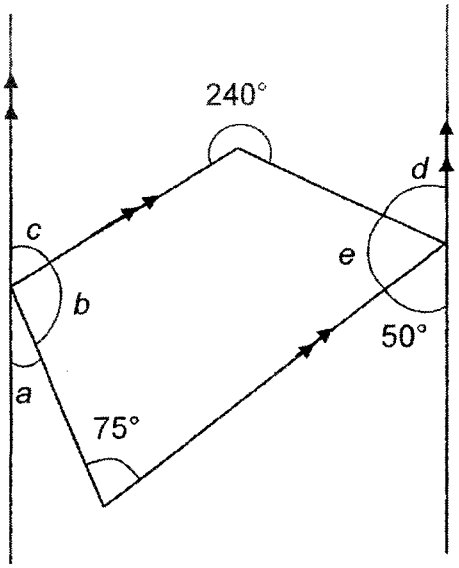
Ans: _____ cm^2

(Go on to the next page)

4. The figure below is made up of a trapezium and 2 parallel lines. Study the figure and answer the following questions,

Do not write in this space

(a) which 2 angles add up to 75°?



Ans: (a) ∠_____ and ∠_____ [1]

(b) which 2 angles add up to 165°?

Ans: (b) ∠_____ and ∠_____ [1]

(Go on to the next page)

5. Mrs Lee left Town P for Town Q, driving at an average speed of 60 km/h. 20 minutes later, Mr Kumar left Town Q for Town P, driving at an average speed of 80 km/h. Mrs Lee met Mr Kumar 50 minutes after she left Town P. What is the distance between Town P and Town Q?

Do not write in this space

Ans: _____ km

(Go on to the next page)

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)

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6. A school is collecting money for a donation drive. $\frac{1}{2}$ of the students in the school donated \$3. $\frac{2}{5}$ of them donated \$4. The rest of the students donated \$5. A total of \$9000 in donation is collected from the school. How many students are there in the school?

Ans: _____ [3]

7. At first, Jing Jing had a total of 4000 paper clips and magnets. After she gave away 50 paper clips and 10% of the magnets, she had a total of 1125 magnets left. How many paper clips did Jing Jing have at first?

Ans: _____ [3]

(Go on to the next page)

8. There are 210 students in the level and they are divided into groups of three. It is found that:

1) There are 23 groups with only 1 boy.

2) There are 34 groups with two or more boys.

3) The number of all-boy groups is twice the number of all-girl groups.

How many girls are there in the level?

Do not write in this space

Ans: _____ [3]

(Go on to the next page)

9. There was 21.6 litres of water altogether in container A and container B. The water level in container A was the same as container B. The base area of container A was 700 cm^2 and the base of container B has dimensions as shown.

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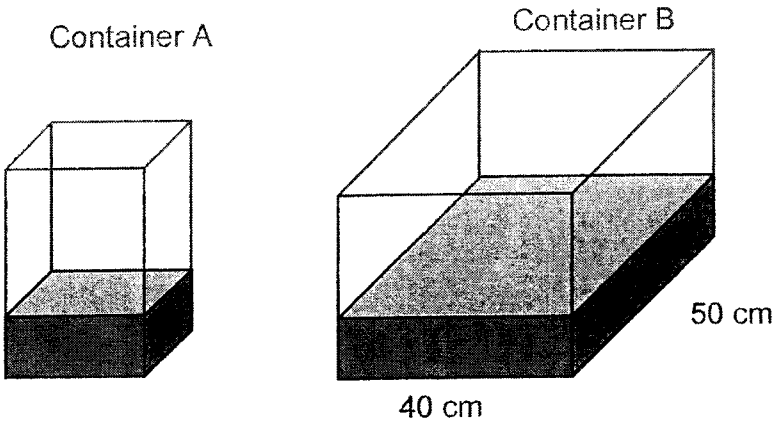

(a) What was the height of water in container B?

Ans: (a) _____ [1]

(b) From which container should water be poured out from such that both containers would have the same amount of water? How much water should be poured?

Ans: (b) Container _____

Ans: _____ [2]

(Go on to the next page)

10. ABCD is a rhombus and CDEF is a parallelogram.
Find ∠ ACG.

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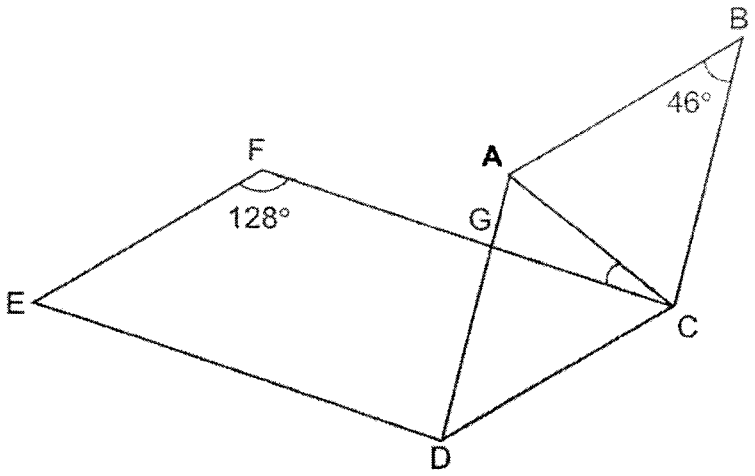


Ans: _____ [3]

(Go on to the next page)

11. There were red, blue, white and green stickers in a bag. After the percentage of red stickers was increased by 60%, the percentage of blue stickers was decreased by 30% and $\frac{2}{7}$ of the white stickers were coloured green, the number of each colour of stickers became the same. There were a total of 94 080 stickers in the end. Find the total number of stickers in the bag at first.

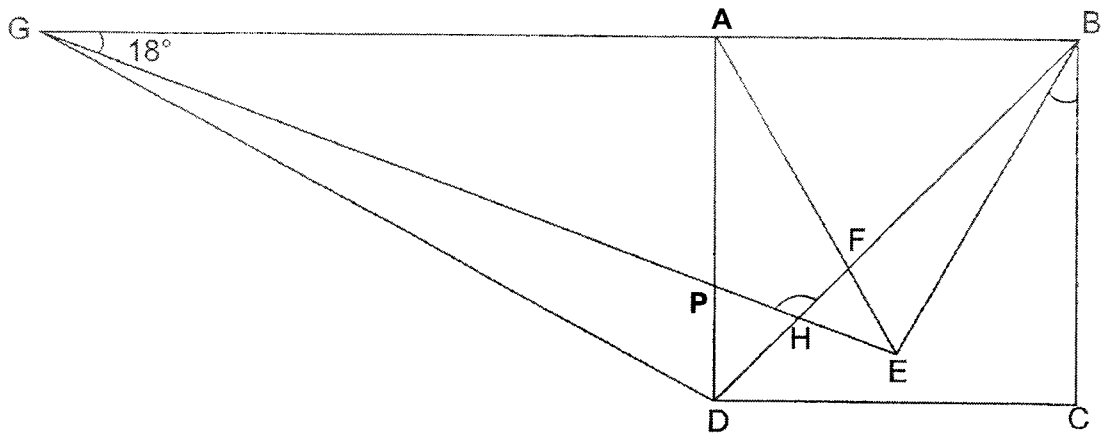
Do not write in this space

Ans: _____ [5]

(Go on to the next page)

12. The figure below is formed by a square ABCD, equilateral triangle ABE and triangles BDG and BEG. AFE and BFD are straight lines.

Do not write in this space



(a) Find ∠CBE.

Ans: (a) _____ [2]

(b) Find ∠BHG.

Ans: (b) _____ [2]

(Go on to the next page)

13. Shop A, Shop B and Shop C sells an identical pen at different prices. The price of the pen is shown in the table below.

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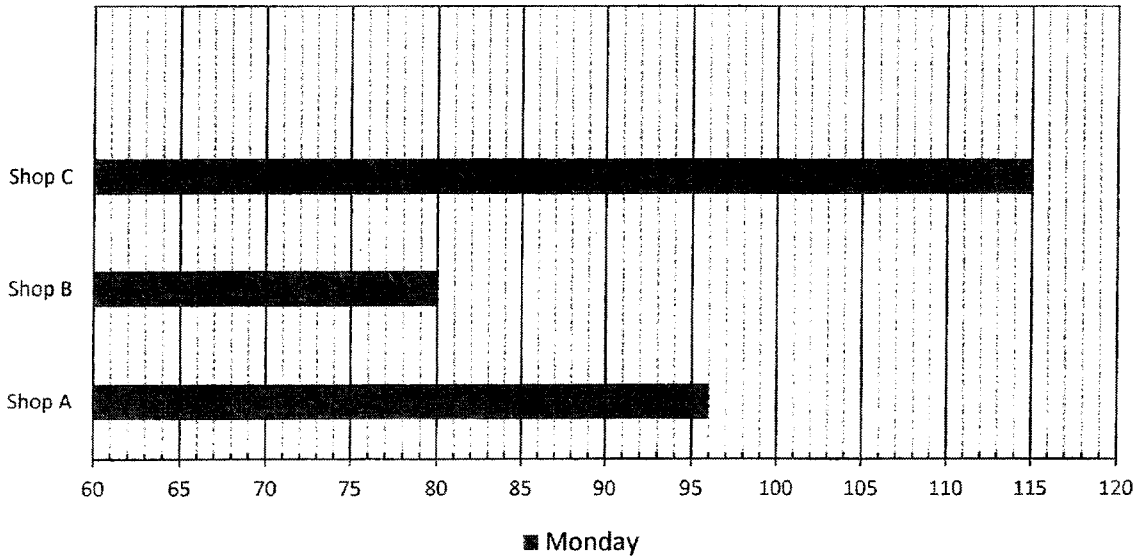
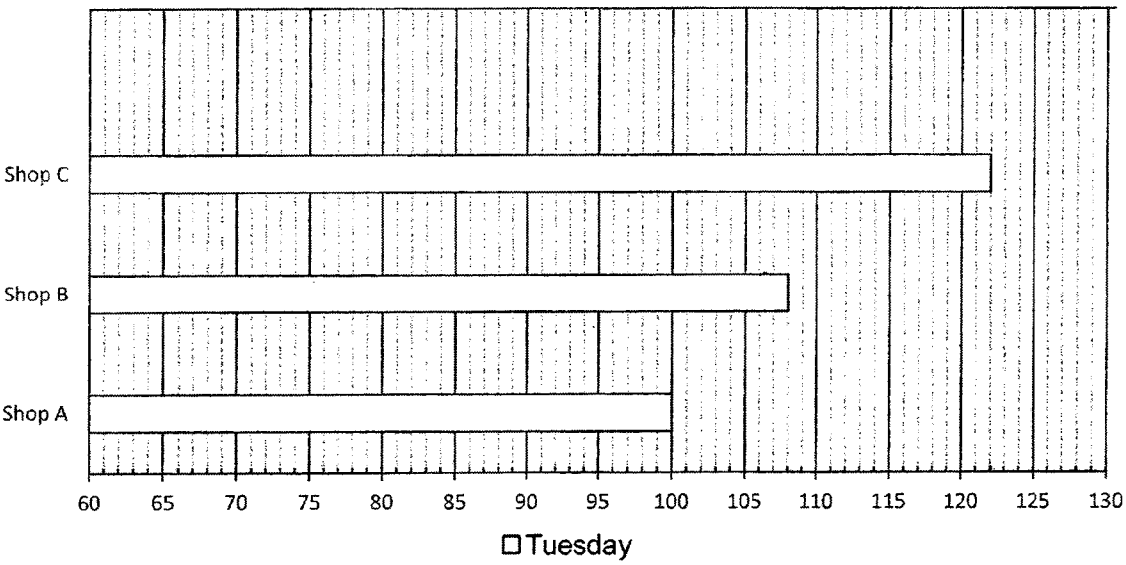
Shop	Shop A	Shop B	Shop C
Price of 1 pen	$1.20	$1.50	$1.00

The bar graph below shows the number of pens sold by the 3 shops on Monday and Tuesday.





(a) How much money was collected altogether by Shop A from the sale of the pens on Monday and Tuesday?

Ans: (a) _____ [1]

Continue with part (b) on the next page.

(Go on to the next page)

(b) What was the percentage increase in the number of pens sold by shop C from Monday to Tuesday? Round your answer to 2 decimal places.

Do not write in this space

Ans: (b) _____ [1]

(c) On Tuesday, a discount was given in Shop B. Shop B collected $6.60 less on Tuesday than Monday. What was the percentage discount given in shop B on Tuesday?

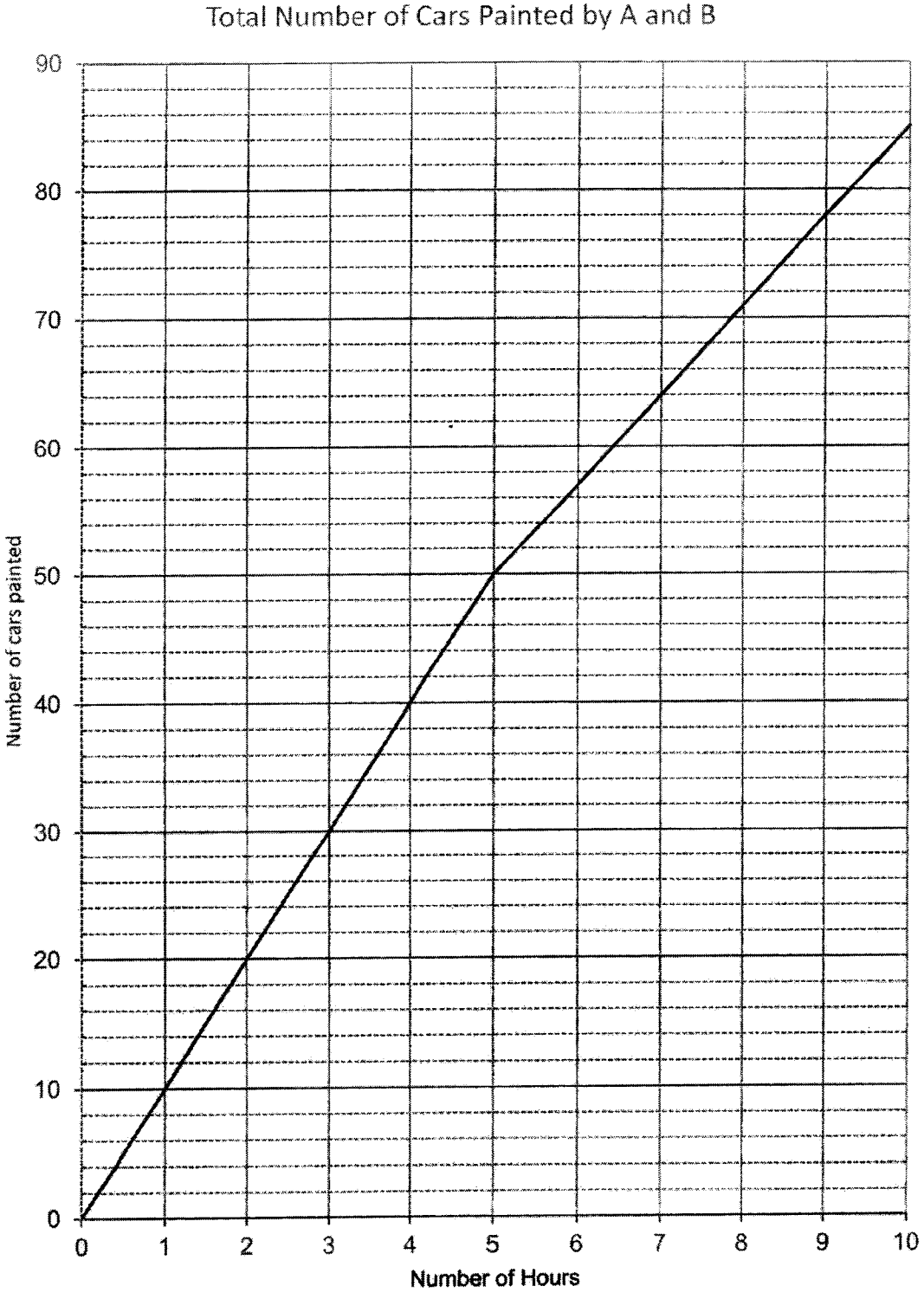
Ans: (c) _____ [2]

(Go on to the next page)

14. The graph below shows the total number of cars painted by two different robots, Robot A and Robot B over a period of 10 hours at a constant rate.

Robot B stopped working after 5 hours while Robot A continued painting the cars at the same constant rate as before.

Do not write in this space



Answer the questions on the next page.

(Go on to the next page)

(a) How many cars did Robot A and B paint altogether before Robot B stopped working?

Do not write in this space

Ans: (a) _____ [1]

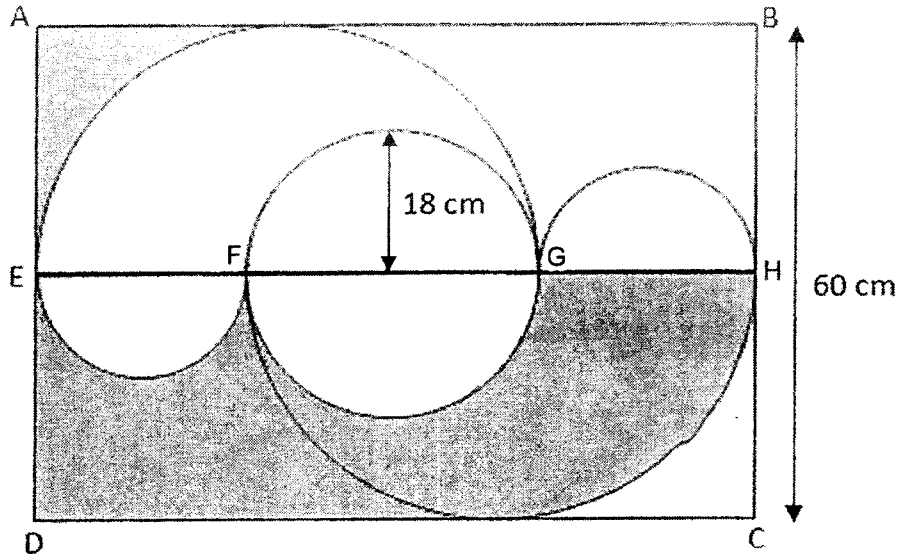
(b) How many cars did Robot A paint over the 10 hours?

Ans: (b) _____ [3]

(Go on to the next page)

15. The figure shown is made up of rectangle ABCD, a circle with FG as the diameter, 2 identical small semi-circles with diameters EF and GH and 2 larger semi-circles with diameters EG and FH. The radius of the circle FG is 18 cm. EH is a straight line. The length of BC is 60 cm.

Do not write in this space



(a) Find the length of EF.

Ans: (a) _____ [1]

(b) Find the total area of all the shaded parts. (Take $\pi = 3.14$)

Ans: (b) _____ [3]

(Go on to the next page)

16. A spiral number pattern begins with the number 8 as shown below. 9 is the second number of the pattern which happens at the first corner. 10 is the third number of the pattern which happens at the second corner. 12 is the fifth number of the pattern which happens at the third corner and the spiral number pattern continues on.

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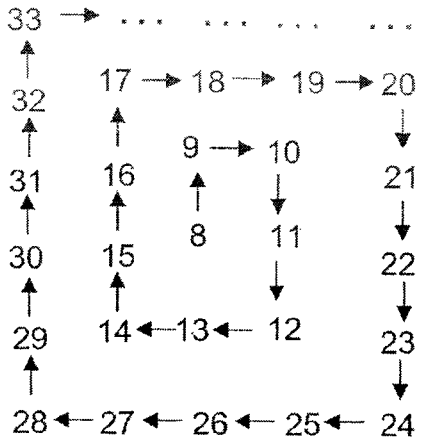

(a) What is the 103rd number of the pattern?

Ans: (a) _____[1]

(b) Find the number at the 20th and 21st corner.

Ans: (b) 20th corner: _____ [2]

21st corner: _____ [2]

(Go on to the next page)

17. Laptops were sold at the discount stated below.

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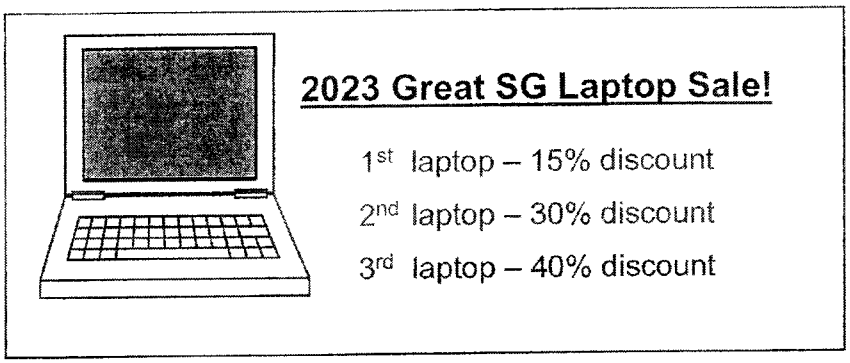


Jian Hao paid a total of $5805 for 3 similar laptops during the 2023 Great SG Laptop Sales. The amount that he paid includes an 8% GST.

(a) What was the original price of a laptop without GST?

Ans: (a)_____ [2]

(b) If he had bought the 3 laptops without any discount, how much more would he have to pay not including the GST?

Ans: (b)_____ [2]

End of paper
Have you checked your work?

SCHOOL : Rosyth SCHOOL
LEVEL : PRIMARY 6
SUBJECT : MATH
TERM : 2023 Prelims

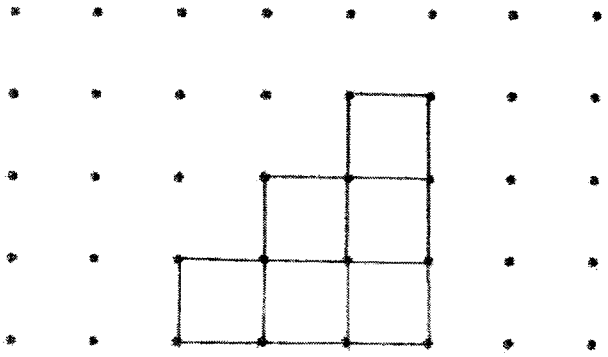
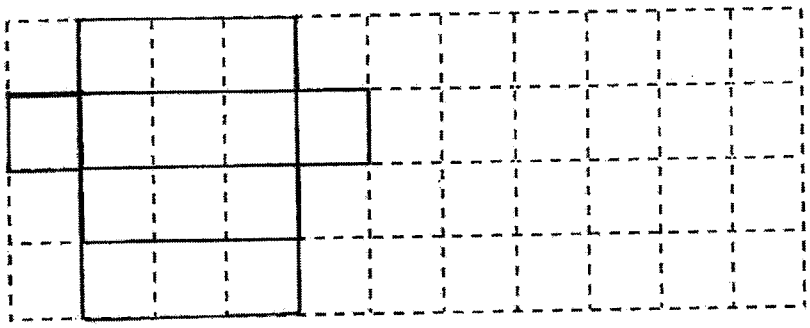
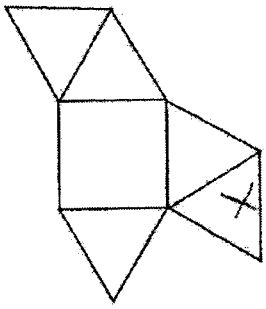
PAPER 1 BOOKLET A

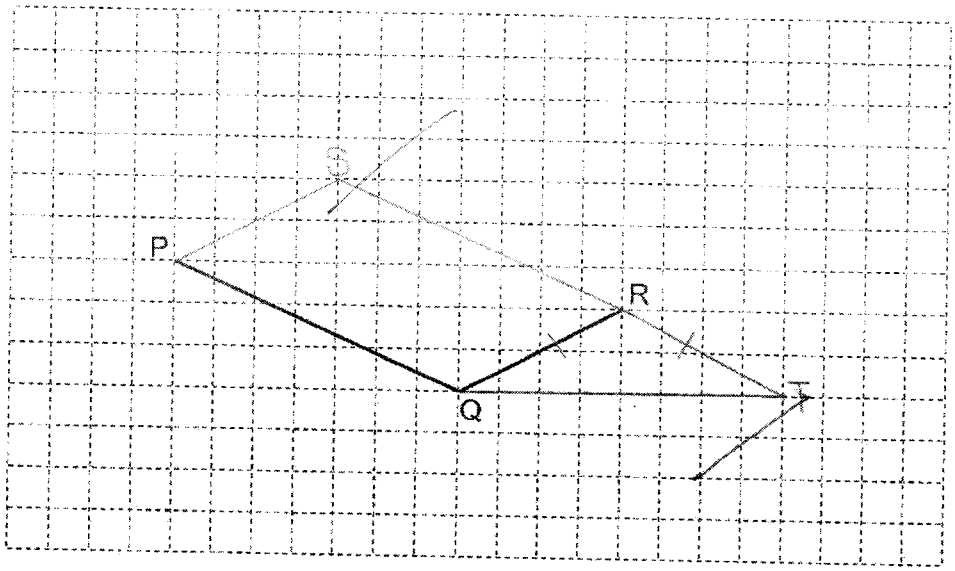
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	4	3	1	2	2	1	4	3

Q 11	Q12	Q13	Q14	Q15
2	1	4	4	3

PAPER 1 BOOKLET B

Q16)	$10 * (24 + 36 \div)$ $= 10 * (24 + 6)$ $= 10 * 30$ $= 300$
Q17)	Total = $37 + 48 + 44 = 129$ Average= $129 \div 3 = 43$
Q18)	$\frac{1}{2} * 6 * 3 = 9$
Q19)	$100\% - 25\% - 15\% - 50\% = 10\%$ $10U: 40$ $50U: 40 * 5 = 200$
Q20)	$180° - 112° = 68°$
Q21)	a) 4095 b) 5049
Q22)	$280
Q23)	$4U: 400$ $1U: 100$ $7U: 700$
Q24)	Monday: (P+4) Tuesday: (3P+4)

	Altogether: 4P+8 $4P + 8 = 240$ $4P = 240 - 8 = 232$ $1P = 232 \div 4 = 58$
Q25)	$100u - 28u = 72U$ $72U = 12 + 16 + 8 = 36$ $1U = 36 \div 72 = 0.5$ $Science(28U) = 28 * 0.5 = 14$
Q26)	**4**
Q27)	Top View  **a)** **b) 4**
Q28 a)	
Q28 b)	

Q29	
Q30	$1\ Day = 24$ $7\ Days = 7 * 24 = 168$ $168 * \$2 = \$336$

PAPER 2

Q1)	$1st\ to\ 5th = 4\ gaps$ $4\ gaps = 1\frac{3}{4} = 175cm$ $2nd\ to\ 12th = 10\ gaps$ $10gaps = \frac{175cm}{4} * 10 = 437.5cm = 4.375m$
Q2)	$5P - 2P = 3P$
Q3)	Width of the strip = $\sqrt{9cm^2} = 3cm$ Area of unfolded stripe = $60cm * 3cm = 180cm^2$ Area of shaded folded stripe = $180cm^2$-$18cm^2$=$162cm^2$
Q4a)	$180° - 60° - 50° = 70°$ $180° - 120° = 60°$ Answer: A and C
Q4b)	$\angle B + \angle E = 360° - 120° - 75° = 165°$ Answer: $\angle$B and $\angle$e
Q5)	Mrs Lee S: 60km/hour T: 50 mins = $\frac{5}{6}h$ D= S * T = 60km/h x $\frac{5}{6}h = 50km$ Mr Kumar S: 80km/hour

	T: 30mins = $\frac{1}{2}h$ D= $S * T$ =80km/h x $\frac{1}{2}h$ =40km Total Distance = 40km + 50km = 90km
Q6)	$15u + 6u + 5u = 36u$ $36u = 9000$ $1u = 9000 \div 36 = 250$ $Students = 10 * 250 = 2500$
Q7)	$9u = 1125$ $1u = 1125 \div 9 = 125$ $10u = 10 * 125 = 1250$ $Paper\ clip\ at\ first = 4000 - 1250 = 2750$
Q8)	210÷3=70 All girls teams= $70 - (34 + 23) = 13$ All boys teams= $13 * 2 = 26$ Two boys One Girl= $34 - 26 = 8$ One boy 2 Girls=23 Total Girls = $(13 * 3) + (1 * 8) + (23 * 2) = 39 + 8 + 46 = 93$
Q9a)	Based area of B = $50cm\ x\ 40cm = 2000cm^2$ 21.6litres= 21600cm^3 Height in both= 21600cm^3 ÷(700cm^2+2000cm^2)=8cm
Q9b)	Answer: Container B A= $8 * 700 = 5600$ B= $8 * 2000 = 1600$ 21600÷2=10800 To pour $16000 - 10800 = 5200cm^3$
Q10)	$\angle DCG = 180° - 128° = 52°$ $\angle ACB = (180° - 46°) \div 2 = 67°$ $\angle BAD = 180° - 46° = 134°$ $\angle ACG = 134° - 52° - 67° = 15°$
Q11)	$4 * 560n = 2240n$ $2240u = 94080$ $1u = 94080 \div 2240 = 42$ $350u + 800u + 784u + 336u = 2270u$ $2270u = 2270 * 42 = 95340$

Q12a)	$\angle HEF = 180° - 18° - 60° - 60° = 42°$ $\angle APH = 180°-30°-42°=108°$ $\angle CBE=90°-60°=30°$
Q12b)	∠BHG=360°-105°-30°-108°=117°
Q13a)	$196 * 1.2 = 235.20$
Q13b)	$\frac{7}{115} * 100\% \approx 6.09\%$
Q13c)	$\$162 - \$113.40 = \$48.60$ $\$48.60 \div 108 = \$0.45$ $\$1.50 - \$0.45 = \$1.05$ $\frac{\$0.45}{\$1.50} * 100\% = 30\%$
Q14a)	50
Q14b)	A- 5hours = $80 - 50 = 35$ A- 1hour= $35 \div 5 = 7$ 10hours= $10 * 7 = 70hours$
Q15a)	60cm ÷2=30cm EG=$30cm * 2 = 60cm$ EF= $60cm - 36cm = 24cm$
Q15b)	∠DEH=$30 * 84 = 2520$ $\frown = \frac{1}{2} * 12 * 12 * 3.14 = 226.08$ $\frown = \frac{1}{2} * 18 * 18 * 3.14 = 508.68$ $2520 - 226.08 - 508.68 = 1785.24\text{cm}^2$
Q16a)	103+7=110
Q16b)	20th Corner:118 21th Corner: 129 Formula Nth Corner = $8 + [\frac{n}{2} * (\frac{n}{2} * 11)]$
Q17a)	$85u + 70u + 60u = 215u$ $215u = 5805$ $1u = 5808 \div 215 = \$27$ $100u = 100 * \$27 = \$2700$ $Original\ Price = \frac{2700}{108} * 100 = 2500$

Q17b)	$\$2500 * 3 = \$7500$ $\$7500 - \$5375 = \$2125$