HENRY PARK PRIMARY SCHOOL
2018 SEMESTRAL ASSESSMENT 1
MATHEMATICS
PRIMARY 6

PAPER 1
(BOOKLET A)

Name: _____ ( ) Parent's Signature

Class: Primary 6_____ / 6M_____ _____

Marks:

Paper 1	Booklet A	20
	Booklet B	25
Paper 2		55
Total		100

Total Time for Booklets A and B: 1 hour

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.
You are **not** allowed to use a calculator.

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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 Find the value of $8 + 5 \times 8 - 6 \div 2$

(1) 13
(2) 21
(3) 45
(4) 49

2 How many sixths are there in $3\frac{2}{3}$?

(1) 11
(2) 13
(3) 20
(4) 22

3 Which of the following is the same as 5080 g?

(1) 5 kg 8 g
(2) 5 kg 80 g
(3) 50 kg 8 g
(4) 50 kg 80 g

4 After donating 25% of his savings, Jack had $60 of his savings left.
How much money did he have in his savings at first?

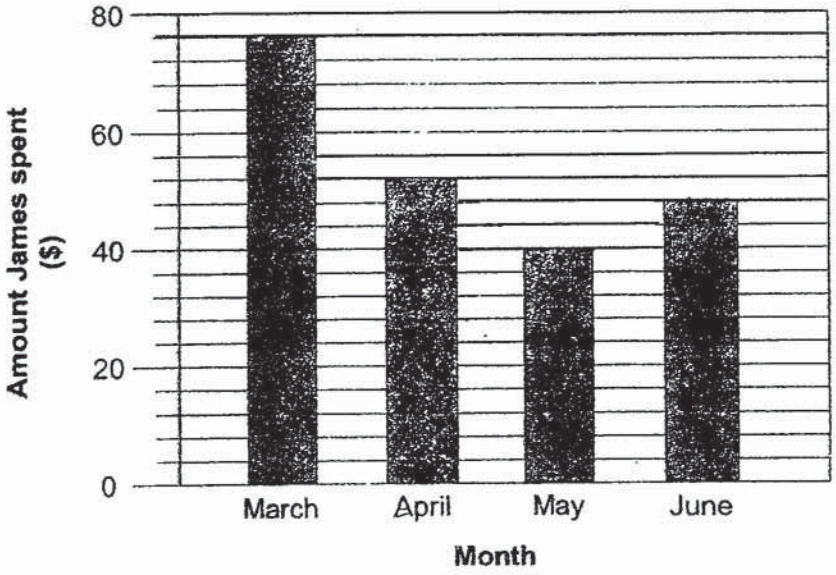
(1) $75
(2) $80
(3) $105
(4) $240

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*Use the information below to answer Questions **5** and **6**.*

James received $150 from his father each month as pocket money. The graph shows the amount of pocket money he spent each month from March to June.



5 In which month did James spend about half his pocket money?

(1) March
(2) April
(3) May
(4) June

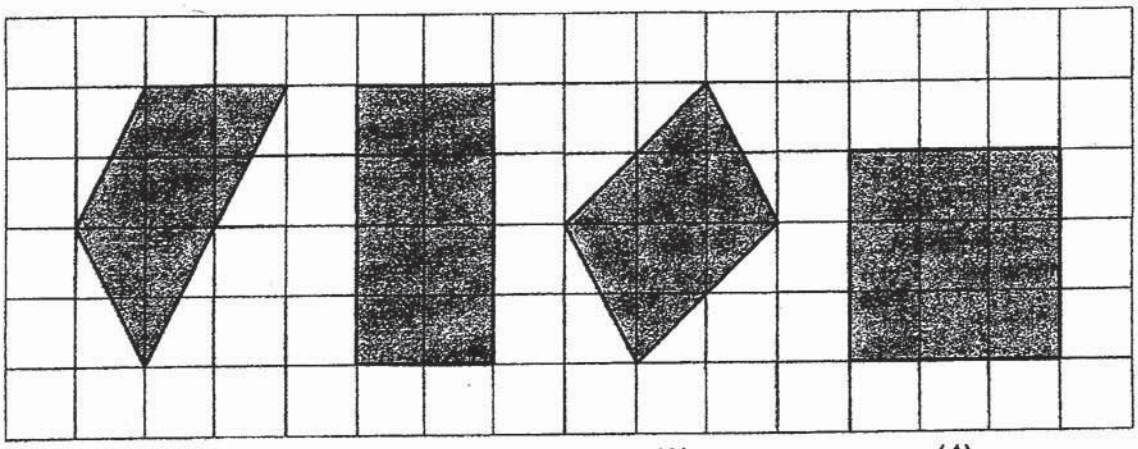
6 What is the average amount of money that James spent in each month from March to May?

(1) $42
(2) $46
(3) $54
(4) $56

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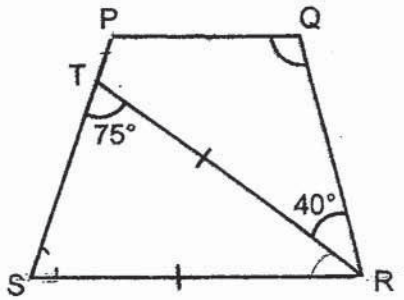
7 The figures below are drawn on a square grid. Which one of the following figures is an example of a rhombus?



(1) (2) (3) (4)

8 In the figure below, PQRS is a trapezium and RT = RS.
PQ is parallel to SR. Find ∠PQR.

(1) 75°
(2) 105°
(3) 110°
(4) 140°



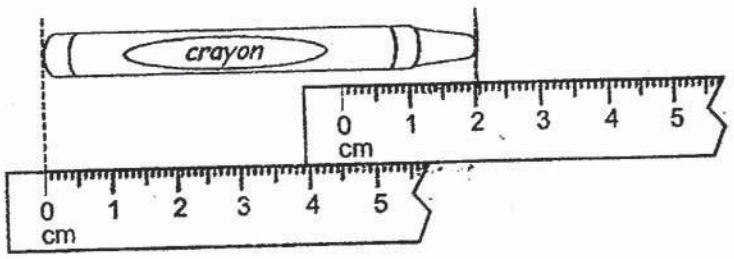
9 There are 16 girls in a class of 36 pupils. What is the ratio of the number of girls to the number of boys?

(1) 4 : 5
(2) 4 : 9
(3) 5 : 4
(4) 5 : 9

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10 What is the length of the crayon shown in the figure below?



(1) 6.0 cm
(2) 6.5 cm
(3) 6.7 cm
(4) 7.0 cm

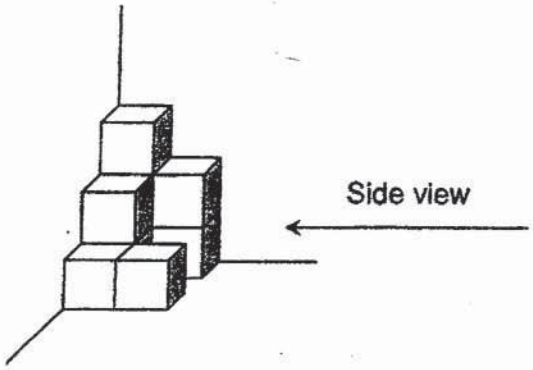
11 Aaron, Tom and Xavier had $43.20 altogether. Aaron had 3 times as much money as Tom. Tom has twice as much money as Xavier. How much money did Tom have?

(1) $4.80
(2) $7.20
(3) $9.60
(4) $14.40

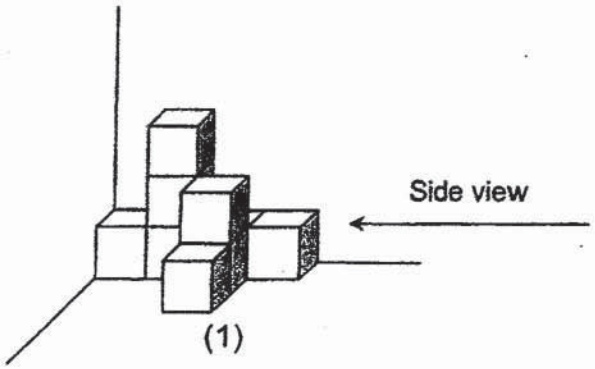
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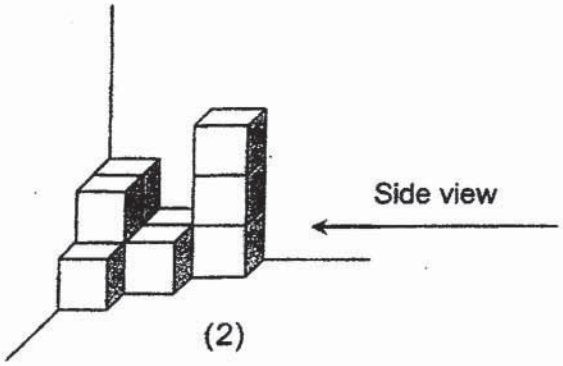
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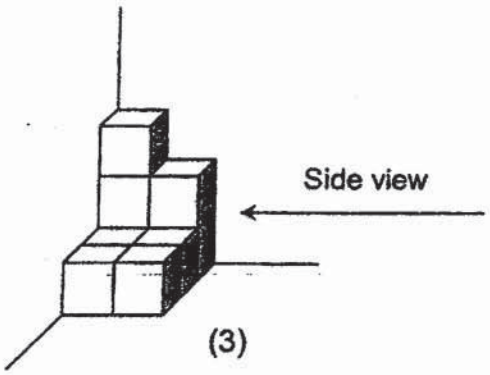
12 Ahmad formed a solid made up of unit cubes as shown below.

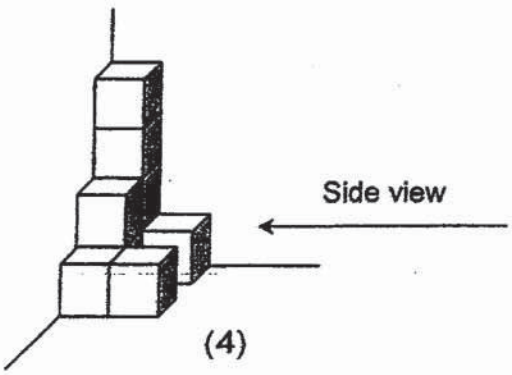


Bala used the same number of unit cubes as Ahmad to form another solid with the same side view. Which of the following is the solid that Bala formed?









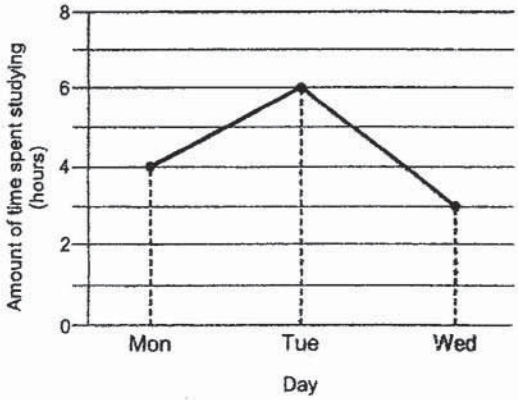
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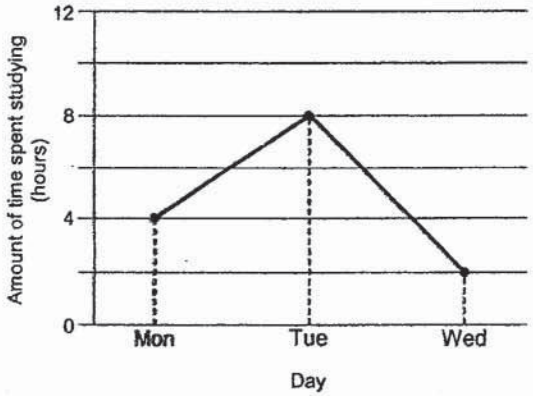
13 The table below shows the amount of time Mary spent studying over 3 days.

Day	Amount of time spent studying (hours)
Mon	4
Tue	6
Wed	2.5

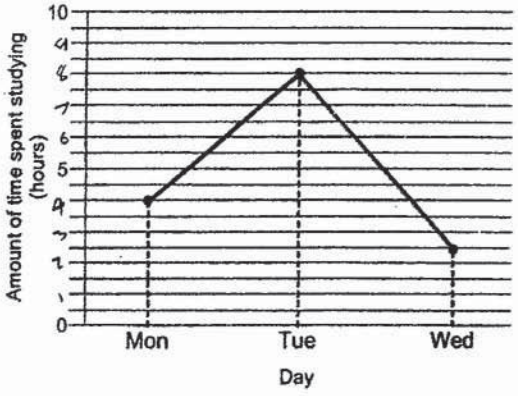
Which line graph best represents the information given in the table above?



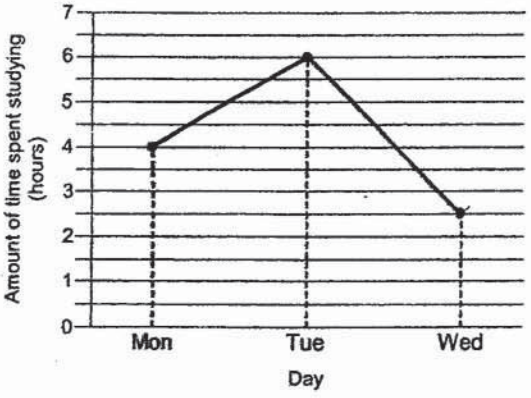
(1)



(2)



(3)

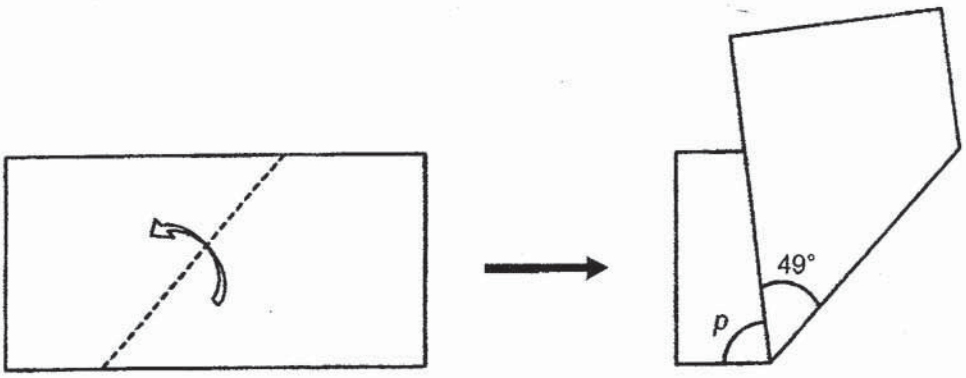


(4)

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14 A rectangular piece of paper was folded along the dotted line as shown below. Find $\angle p$.



(1) 131°
(2) 82°
(3) 49°
(4) 41°

15 Jiale spent $\frac{5}{8}$ of her money on a purse and 7 similar markers. The cost of each marker is $\frac{1}{6}$ of her remaining money. The total cost of the 7 markers is \$12 more than the cost of a purse. How much did Jiale have at first?

(1) \$20
(2) \$22
(3) \$48
(4) \$64

(Go on to Booklet B)

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HENRY PARK PRIMARY SCHOOL
2018 SEMESTRAL ASSESSMENT 1
MATHEMATICS
PRIMARY 6

PAPER 1
(BOOKLET B)

Name: _____ ( )

Class: Primary 6_____ / 6M_____

/25

Total Time for Booklets A and B: 1 hour

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.

You are **not** allowed to use a calculator.

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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)

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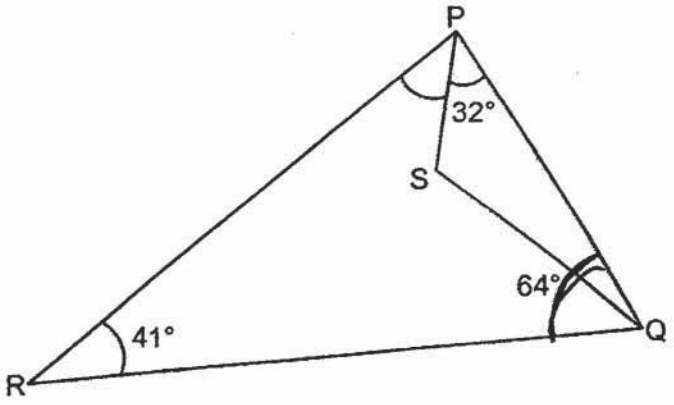
16 Find the value of 12.4 – 8.07

Ans: _____

17 Express 2.93 metres in centimetres.

Ans: _____ cm

18 In the figure below, ∠PRQ = 41°, ∠PQR = 64° and ∠SPQ = 32°. Find ∠RPS.



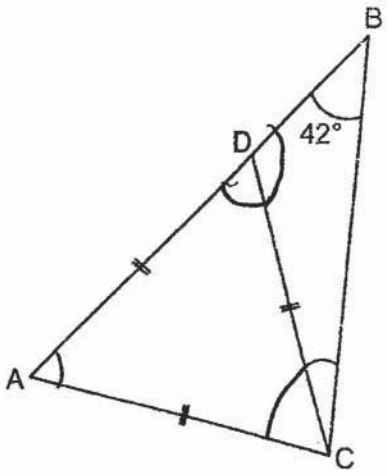
Ans: _____ °

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19 In the figure below, ADC is an equilateral triangle. Find ∠DCB.

Do not write in this space



Ans: _____ °

20 Express 0.009 as a percentage.

Ans: _____ %

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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.

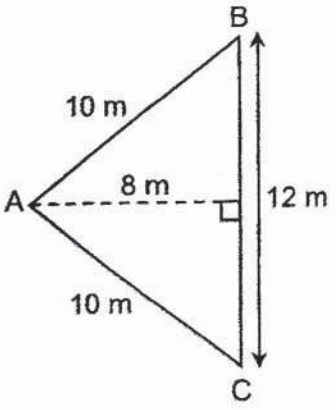
(20 marks)

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21 Joe had a ribbon 27 m long. He used $\frac{4}{9}$ of the ribbon to tie a present. What was the length of the ribbon used to tie the present?

Ans: _____ m

22 What is the area of triangle ABC shown below?



Ans: _____ m^2

23 How much does Ali have to pay for the bag after adding 7% GST?



Ans: $ _____

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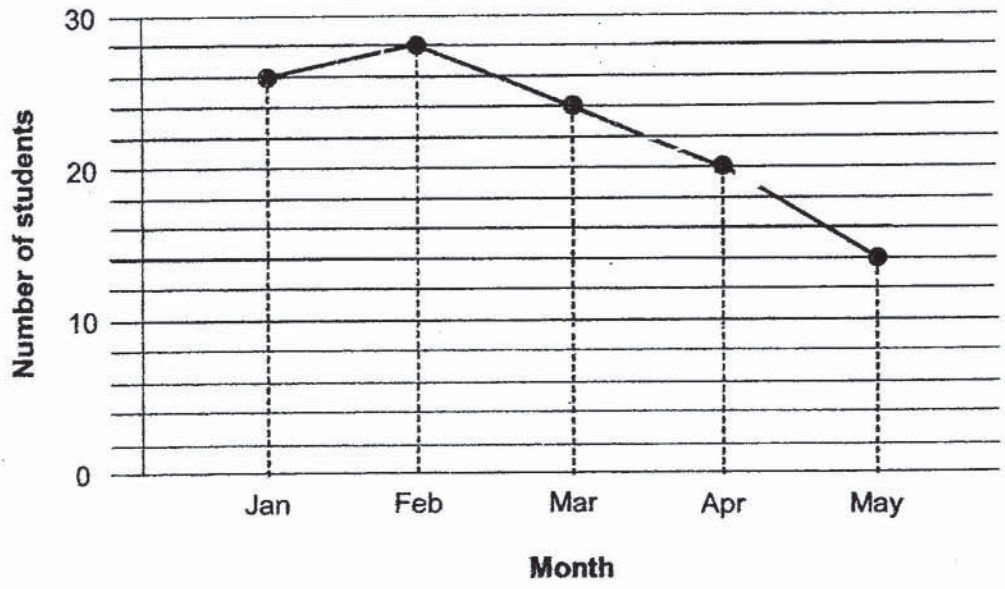
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24 Find the value of $3w - \frac{2w}{5} + 6$ when $w = 5$

Ans: _____

25 The line graph shows the number of students who were late for school from January to May.



$\frac{5}{7}$ of all the students who were late were girls. How many boys were late?

Ans: _____

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26 Julia played a total of four games in a competition. The scores are shown below.

Do not write in this space

Game	Score
1st	33
2nd	23
3rd	?
4th	28

Her average score for the first three games was 24.

(a) What was her score for the 3rd game?

(b) What was the percentage increase in her score from the 3rd to the 4th game?

Ans: (a) _____

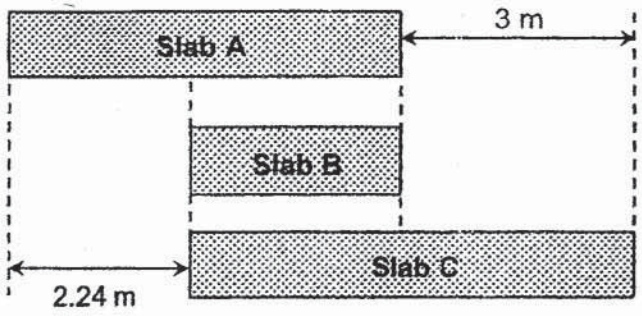
(b) _____ %

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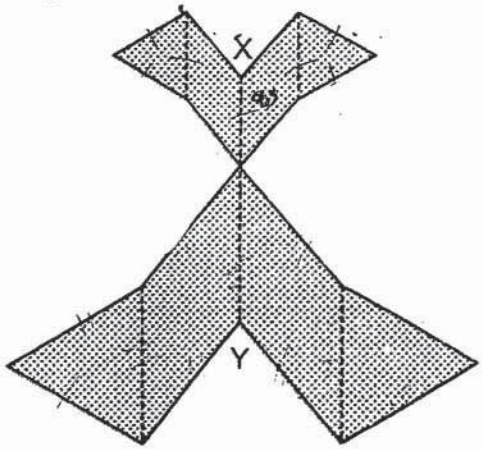
Do not write in this space

27 The figures below show 3 concrete slabs. The total length of the 3 concrete slabs is 9.98 m. Find the length of concrete slab B.



Ans: _____ m

28 The figure below is formed using 4 rhombuses and 4 equilateral triangles. XY is a straight line measuring 9 cm. Find the perimeter of the figure.



Ans: _____ cm

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29 The ratio of the number of girls to the number of boys in a camp is 2 : 3. 65 girls left the camp and the ratio of the number of girls to the number of boys became 1 : 4. Find the total number of children at the camp at first.

Do not write in this space

Ans: _____

30 Charlie used $\frac{2}{7}$ of his money to buy 4 packets of flour and 7 packets of sugar. The cost of 2 packets of flour was the same as that of 3 packets of sugar. What was the most number of packets of sugar that Charlie could buy with the money he had left?

Ans: _____

End of Paper 1

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HENRY PARK PRIMARY SCHOOL
2018 SEMESTRAL ASSESSMENT 1
MATHEMATICS
PRIMARY 6

PAPER 2

Name: _____ _____ ( )

Class: Primary 6_____ / 6M_____

/ 55

Time for Paper 2: 1 h 30 min

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Show your working clearly as marks are awarded for correct working.

Write your answers in this booklet.

You are allowed to use a calculator.

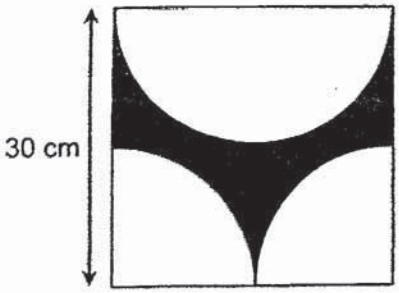
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Questions **1** to **5** carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

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1 The figure shows a semicircle and 2 quarter circles inside a square of side 30 cm. Find the area of the shaded part. (Take $\pi = 3.14$)



Ans: _____ cm^2

2 The table below shows the number of 4 different coloured T-shirts sold by a shop in the month of March.

Colour of T-shirt	Number of T-shirts sold
Red	82
Yellow	117
Green	65
Blue	?

30% of all the T-shirts sold were yellow. How many blue T-shirts were sold?

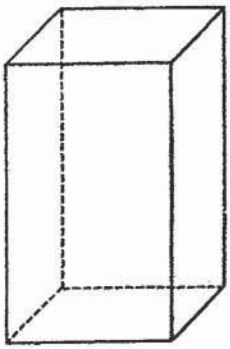
Ans: _____

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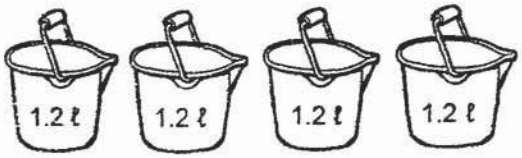
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3 Tank P measures 20 cm by 10 cm by 60 cm.

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Tank P



Joe poured 4 pails of water into tank P. Each pail contained 1.2 litres of water. How much more water would Joe need to fill tank P to the brim? Express your answer in litres.

Ans: _____ litres

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4 Mrs Sim baked three kinds of buns: red bean, mushroom and cheese buns. After selling $\frac{2}{3}$ of the red bean buns, $\frac{1}{5}$ of the mushroom buns and $\frac{5}{7}$ of the cheese buns, there was an equal number of buns of each kind left. What was the ratio of the number of red bean buns to mushroom buns to cheese buns Mrs Sim baked?

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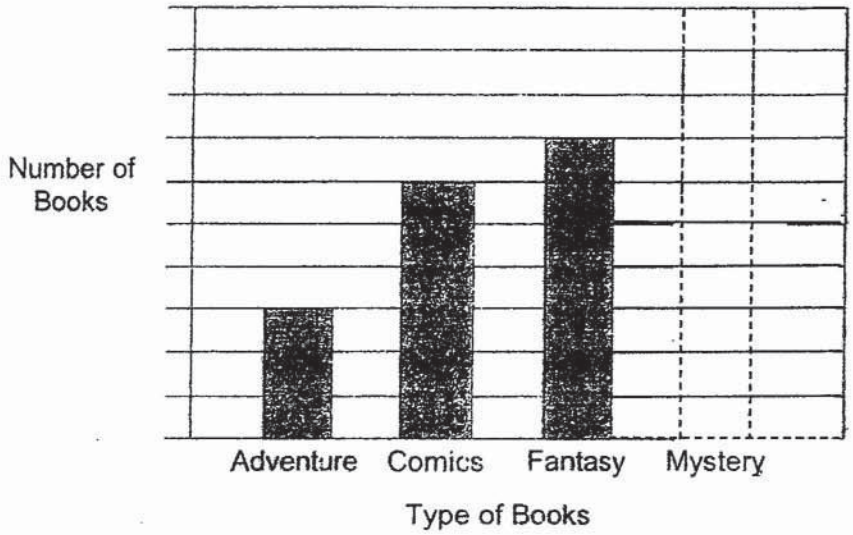
Ans: _____

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5 Books in a library are grouped according to the following types: Adventure, Comics, Fantasy and Mystery. The bar graph shows the number of each type of books in the library. The bar that shows the number of Mystery books has not been drawn.

Do not write in this space



35% of all the books in the library are Fantasy books.
In the graph above, draw the bar to show the number of Mystery books in the library.

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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 and part-question.

(45 marks)

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6 Jacky and Michelle made some bookmarks over two days. On Monday, Jacky made 18 more bookmarks than Michelle. On Tuesday, Jacky made another 25 bookmarks and Michelle made another 19. At the end of the two days, Jacky made $\frac{5}{8}$ of the total number of bookmarks. How many bookmarks did Michelle make altogether?

Ans: _____ [3]

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7 Liz spent $68.50 on 3 bars of chocolate, 4 boxes of cookies and a bag of sweets. The cost of each bar of chocolate is $\frac{2}{5}$ as much as each box of cookies. The bag of sweets cost $1.50 less than each bar of chocolate. What is the cost of the bag of sweets?

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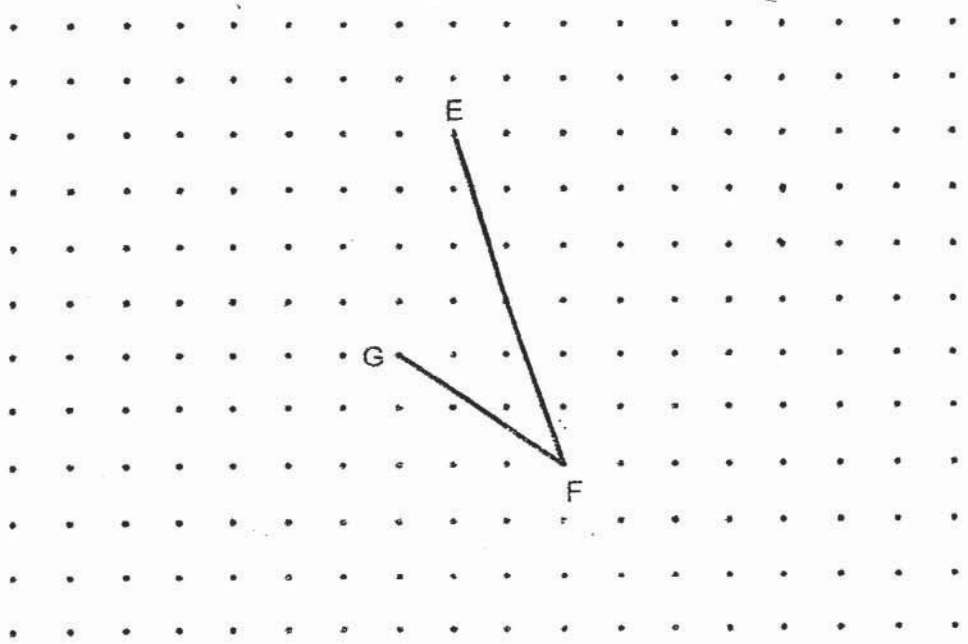
Ans: _____ [3]

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8 In the grid below, two lines EF and FG have been drawn.

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(a) EF and FG are two sides of a parallelogram EFGH. Complete the drawing of the parallelogram EFGH. [1]

(b) GF also forms a side of a square GFKL. K and L are two dots in the grid. Complete the drawing of the square GFKL such that it does not overlap with parallelogram EFGH. [1]

(c) EF also forms one side of an isosceles triangle EFX in which EF = FX and ∠EFX is less than 90°. X is a dot in the grid. Complete the drawing of the triangle EFX such that it does not overlap with parallelogram EFGH. [1]

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9 Gabriel had a rectangular piece of paper as shown in Figure 1. The ratio of the length to the breadth of the paper was 3 : 2.
He cut out 6 semicircles each of diameter 14 cm as shown in Figure 2.
The breadth was now three times as long as the length of AB.
Find the perimeter of the rectangular piece of paper in Figure 1.
(Take $\pi = \frac{22}{7}$)

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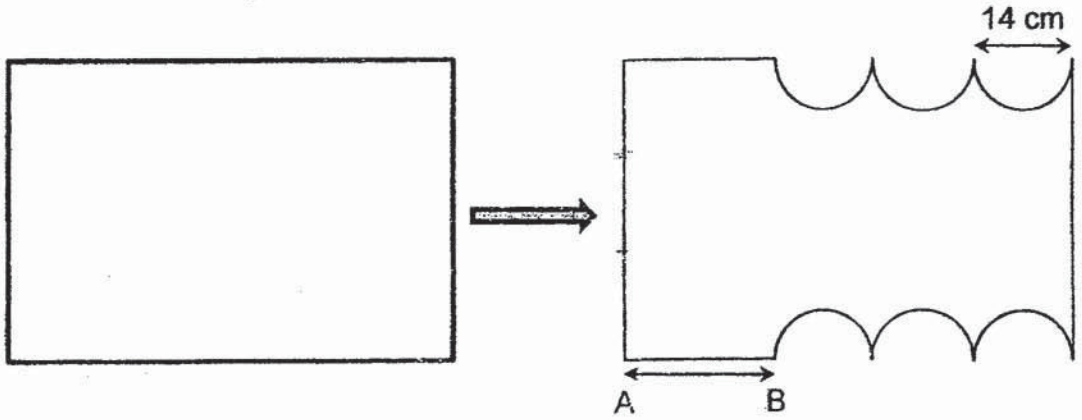


Figure 1 Figure 2

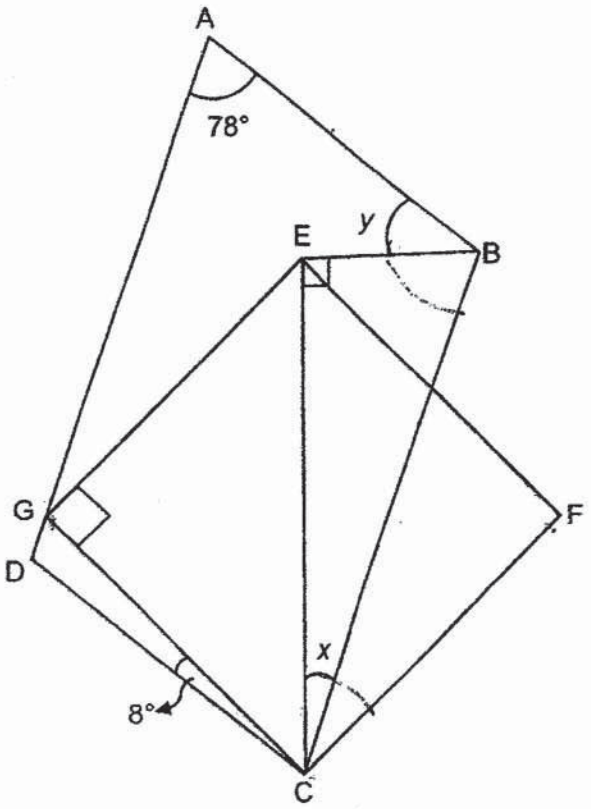
Ans: _____ [3]

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10 In the figure below, ABCD is a parallelogram, EFCG is a square and CEB is a right-angled triangle. $\angle GCD = 8°$ and $\angle GAB = 78°$.

Do not write in this space



(a) Find $\angle x$.

(b) Find $\angle y$.

Ans: (a) _____ [2]

(b) _____ [2]

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11 The table below shows the number of tickets sold for a performance last week.

Do not write in this space

Day	Number of tickets sold
Monday to Friday	$3m$ per day
Saturday	$6m + 25$
Sunday	$4m - 7$

(a) Express the total number of tickets sold last week in terms of m. Give your answer in the simplest form.

(b) The average number of tickets sold each day last week was 174. Find the value of m.

Ans: (a) _____ [1]

(b) _____ [2]

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12 A supermarket prepared vouchers of three different values for a lucky draw. The value of each voucher was either \$10, \$20 or \$50.
There were half as many twenty-dollar vouchers as the total number of ten-dollar and fifty-dollar vouchers.
The ratio of the number of ten-dollar to fifty-dollar vouchers was 5 : 3.
The total value of all the vouchers prepared was \$4760.

(a) What is the ratio of the number of twenty-dollar to ten-dollar to fifty-dollar vouchers?

(b) What was the total number of vouchers prepared?

Ans: (a) _____ [1]

(b) _____ [3]

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13 On Monday, Jimmy paid $42.90 for 9 jars and some marbles at a shop. On Tuesday, he went to the same shop and paid $64.70 for 11 jars and some marbles. Each jar cost $1. He bought 66 more marbles on Tuesday than Monday. Jimmy packed all the marbles he bought into the 20 jars. Some jars contained 12 marbles while the rest contained 16. Given that the cost of each marble was the same,

(a) how many marbles did Jimmy buy altogether?

(b) how many jars contained 16 marbles?

Do not write in this space

Ans: (a) _____ [3]

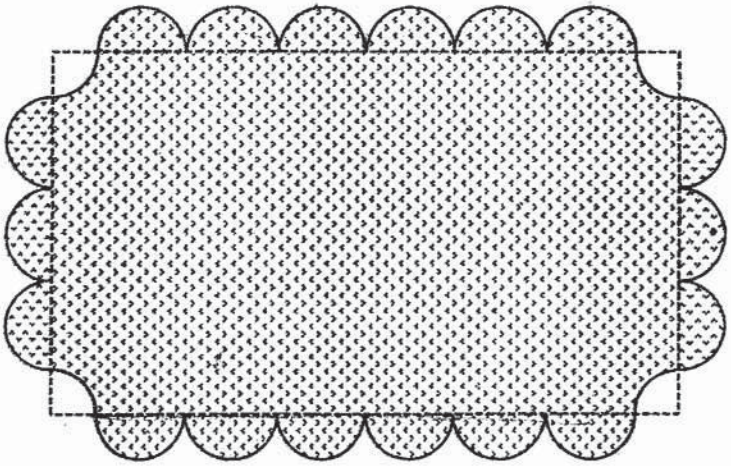
(b) _____ [2]

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14 The shaded figure below shows a rug. The outline of the rug is formed by semicircles and quarter circles, each of radius 7 cm.

Do not write in this space



(a) Find the perimeter of the rug.

(b) Find the area of the rug.

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

Ans: (a) _____ [2]

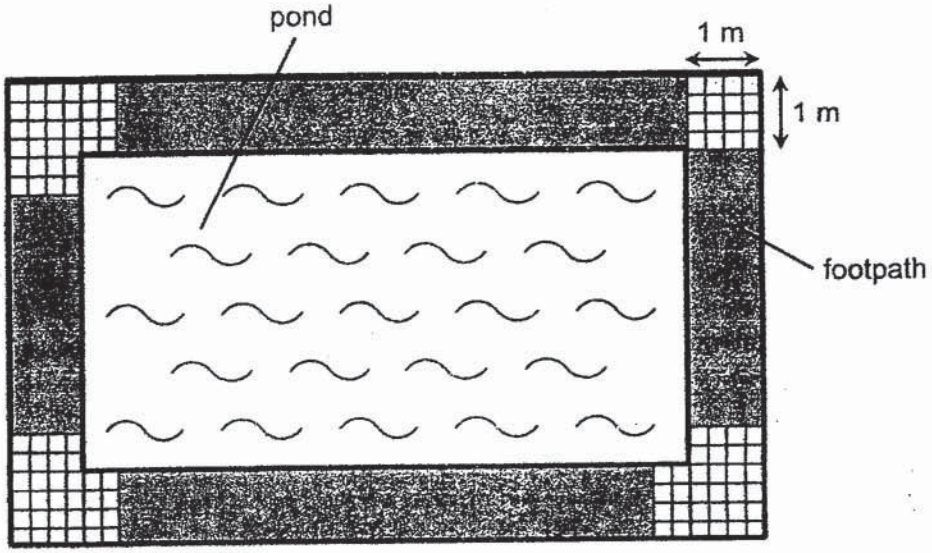
(b) _____ [3]

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15 The figure shows a rectangular pond surrounded by a footpath. The width of the footpath is 1 m throughout. The footpath is fully covered by 488 square tiles of side 0.25 m each, following the pattern shown below. Each tile is in contact with those next to it. What is the perimeter of the pond?

Do not write in this space



Ans: _____ [3]

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16 A total of 481 teachers and principals attended a conference in an auditorium. At the end of the conference, $\frac{4}{5}$ of the teachers and $\frac{3}{4}$ of the principals left the auditorium. 26 more teachers than principals remained in the auditorium.

Do not write in this space

(a) How many principals remained in the auditorium?

(b) All the remaining teachers and principals were put into a number of groups. The number of remaining teachers were divided equally into the groups. The number of remaining principals were also divided equally into the groups. What was the greatest possible number of groups the teachers and the principals were put into?

Ans: (a) _____ [2]

(b) _____ [2]

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17 A school hall was decorated with 60 yellow and 60 blue balloons for a graduation ceremony. Mrs Lee bought more balloons to decorate the hall. 35% of the balloons she bought were yellow and the rest were blue balloons. After all the balloons were put up, the number of yellow and blue balloons was in the ratio 5 : 8.

Do not write in this space

(a) How many yellow and blue balloons were there in the hall now?

(b) Mrs Lee then bought some pink balloons and put them up in the hall. 20% of the balloons in the hall were pink. How many pink balloons did she buy?

Ans: (a) _____ [3]

(b) _____ [2]

End of Paper 2

Setters: Mrs Ling Lee Ching, Mdm Caroline Tay and Mrs Wong Ser Huay

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Answer Key & Worked Solutions

Henry Park Paper

P6 Mathematics SA1 2018

Paper 1

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

Q16) 4.33 Q17) 293 cm Q18) 43 ° Q19) 18° Q20) 0.9%
Q21) 12m Q22) 48 m^2 Q23) $53.50 Q24) 19 Q25) 32
Q26) Q27) 1.58 cm Q28) 72 cm Q29) 260 Q30) 32
a) 16
b) 75%

Paper 2

Q1. Area of square = 30 x 30
= 900 cm^2
Area of circle = π x 15 x 15
= 706.5 cm^2
Area of shaded part = 900 – 706.5
= 193.5 cm^2

Q2. 30% of T-shirt = 117
100% of T-shirt = 390
390 – 82 – 117 – 65 = 126

Q3. Volume of tank = 20 x 10 x 60
= 12 000 cm^3
12000 cm^3 = 12 ℓ
12 ℓ x 4 = 4.8 ℓ
12 ℓ - 4.8 ℓ = 7.2 ℓ

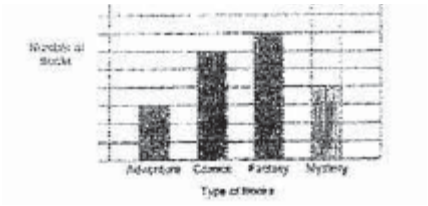
Q4.

Red	Mushroom	Cheese
$\frac{1}{3}$	$\frac{4}{5}$	$\frac{2}{7}$
$\frac{4}{12}$	$\frac{4}{5}$	$\frac{4}{14}$

Ratio = 12 : 5 14

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Q5.



35% of books = 7 units
100% of books = 20 units
20 – 7 – 6 – 3 = 4 units

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Worked Solutions

Show your working clearly in the space provided for each question and write your answers in the spaces provided.

6. At the end of 2 days,

Difference between Jacky and Michelle's bookmark at the end = 18 + 25 – 19 = 24

$\frac{5}{8}$ of total minus $\frac{3}{8}$ of total = 24

$\frac{2}{8}$ → 24

$\frac{1}{8}$ → 12

$\frac{8}{8}$ → 12 x 8 = 96

Number of bookmarks Michelle made = $\frac{3}{8}$ of total = 3 x 12 = 36

Ans: 36

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7. Let 5u = Cost of box of cookies

Cost of bar of chocolate = $\frac{2}{5}$ u x 5 = 2u

Cost of bag of sweets = 2u – 1.5

Total cost = (4 x 5u) + (3 x 2u) + (2u – 1.5) = 68.50

20u + 6u + 2u – 1.5 = 68.50

28u = 68.50 + 1.50 = 70

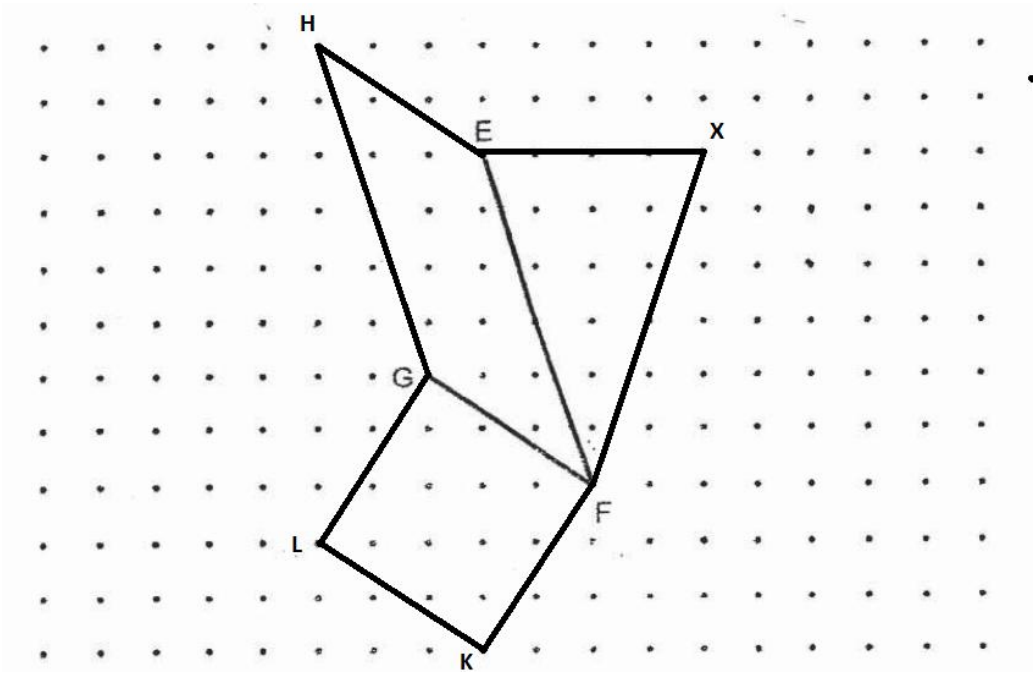
u = 70 ÷ 28 = $2.50

Cost of bag of sweets = 2u – 1.5 = 2 x 2.5 – 1.5 = $3.50

Ans: $3.50

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8.



Ans: As shown

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9. Let length AB = u

Ratio of length of rectangle to breadth → 3 : 2 → 3n : 2n

Length of rectangle = 42 + u = 3n (1)

126 + 3u = 9n (2) = (1) x 3

Breadth of rectangle = 3u = 2n (3)

126 + 2n = 9n substitute 3u into (2)

7n = 126

n = 126 ÷ 7 = 18

Perimeter = 3n + 2n + 3n + 2n = 10n = 10 x 18 = 180cm

Ans: 180 cm

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10. a)

∠ BCD = 78°

∠ ECG = 45°

∠ X = 78 – 8 – 45 = 25°

b)

∠ CBE = 90 – 25 = 65°

∠ ABC = 180 – 78 = 102°

∠ Y = 102 – 65 = 37°

Ans: (a) 25°
(b) 37°

---

11. a)

Total number of tickets = 5 x 3m + 6m + 25 + 4m -7

= 25m + 18

b)

25m + 18 = 174 x 7

25m = 1218 – 18 = 1200

m = 1200 ÷ 25 = 48

Ans: (a) 25m + 18

(b) 48

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12. a)

Ratio of \$10 to \$50 vouchers → 5 : 3 → 5u : 3u

\$20 voucher = $\frac{1}{2}$ x (5u + 3u) = 4u

Ratio of number of \$20 vouchers to \$10 vouchers to \$50 vouchers

= 4u : 5u : 3u → 4 : 5 : 3

b)

Total value of vouchers = 5u x 10 + 3u x 50 + 4u x 20 = 280u = 4760

u = 4760 ÷ 280 = 17

Total vouchers = 5u + 3u + 4u = 12u = 12 x 17 = 204

Ans: (a) 4 : 5 : 3
(b) 204

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13. a)

Cost of marbles on Monday = 42.90 – 9 = \$33.90

Cost of marbles on Tuesday = 64.70 – 11 = \$53.70

Difference between Tuesday and Monday = 53.70 – 33.90 = \$19.80

66 marbles cost \$19.80
Cost of each marble = 19.80 ÷ 66 = \$0.30

Total marbles = (33.90 + 53.70) ÷ 0.30 = 292 marbles

b)
If all jars have 12 marbles, total marbles = 20 x 12 = 240 marbles
Excess marbles = 292 – 240 = 52
Difference between 16 and 12 marbles per jar = 16 – 12 = 4
Number of 16 marble jars = 52 ÷ 4 = 13

Ans: (a) 292 marbles

(b) 13 jars

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14. a)

Number of semi-circles = 6 + 3 + 6 + 3 = 18 = 9 circles

Number of quarter circles = 4 = 1 circle

Equivalent number of circles = 9 + 1 = 10 circles

Perimeter = $10 \times \frac{22}{7} \times 7 \times 2 = 440$ cm

b)

Number of equivalent circles in area = 9 – 1 = 8

Area of 8 circles = $\frac{22}{7} \times 7 \times 7 \times 8 = 1232$ cm^2

Area of rectangle = $(7 \times 7 \times 2) \times (4 \times 7 \times 2) = 5488$ cm^2

Total area of rug = 1232 + 5488 = 6720 cm^2

Ans: (a) 440 cm

(b) 6720 cm^2

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15. Number of tiles at 4 corners = 4 x 16 = 64

Number of tiles on footpath minus corners = 488 – 64 = 424

Length of footpath along perimeter of pond = 424 ÷ 4 = 106 m

Perimeter of pond = 106 m

Ans: 106 m

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16. a)
Let number of teachers = n
Number of principals = u
Total teachers and principals = n + u = 481 (1)
5n + 5u = 481 x 5 = 2405 (2) = (1) x 5

Remaining teachers and principals =
$\frac{1}{5}$ n - $\frac{1}{4}$ u = 26 (3)
4n - 5u = 26 x 20 = 520 (4) = (3) x 20

9n = 2405 + 520 = 2925
n = 2925 ÷ 9 = 325

Number of principals = 481 – 325 = 156
Number of principals who remained = 156 ÷ 4 = 39

b)
Number of teachers who remained = 325 ÷ 5 = 65
Teachers can be divided into groups of 1, 5, 13 or 65
Principals can be divided into groups of 1, 3, 13 or 39

Greatest number of groups = 13

Ans: (a) 39 principals

(b) 13 groups

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17. a)

Ratio of yellow to blue balloons at first → 60 : 60 → 1 : 1 → 15u : 15u

Ratio of yellow to blue balloons bought → 35 : 65 → 35u : 65u

Ratio of yellow to blue balloons at last → 5 : 8 → 50u : 80u

15u = 60

u = 4

Number of yellow balloons = 50 x 4 = 200

Number of blue balloons = 80 x 4 = 320

Total yellow and blue balloons = 200 + 320 = 520

b)

80% → 520

20% → 520 ÷ 4 = 130

Ans: (a) 520 balloons

(b) 130 pink balloons

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