23

METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

PRELIMINARY EXAMINATION 2016
PRIMARY 6
MATHEMATICS

PAPER 1
(BOOKLET A)

Total Time for Booklets A and B: 50 minutes

INSTRUCTIONS TO CANDIDATES

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.
The use of calculators is **NOT** allowed.

Name: _____ ( )

Class: Primary 6._____

Date: 23 August 2016

This booklet consists of 8 printed pages including this page.

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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). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

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1 A number when rounded off to the nearest thousand is 700 000.

What is the number?

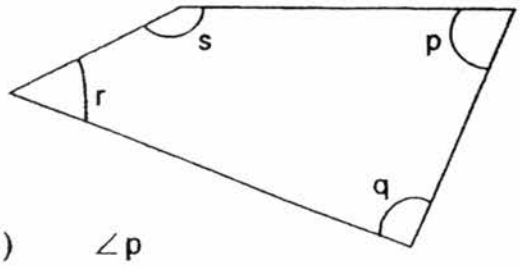
(1) 699 499
(2) 699 999
(3) 700 999
(4) 704 999 ( )

2 $\frac{24}{27} = \frac{32}{\square}$

What is the missing number in the box?

(1) 33
(2) 35
(3) 36
(4) 38 ( )

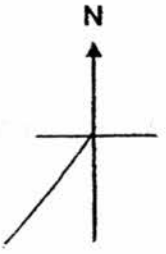
3 In the figure below, which angle is ~~greater than~~ **closest to** a right angle?



(1) ∠p
(2) ∠q
(3) ∠r
(4) ∠s ( )

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4 Sophia faced South-West after turning135° anti-clockwise.
Where was she facing at first?



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

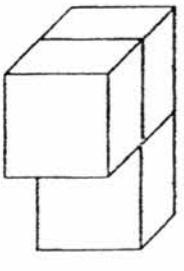
( )

5 Mariam has $20. What is the greatest number of pens that she can buy?

First 6 pens at $1 each Additional pens at 80 cents each

(1) 11
(2) 20
(3) 23
(4) 25

6 The solid below is made up of 3 similar cubes.
The area of the shaded surface is 48 cm². What is the volume of the solid?

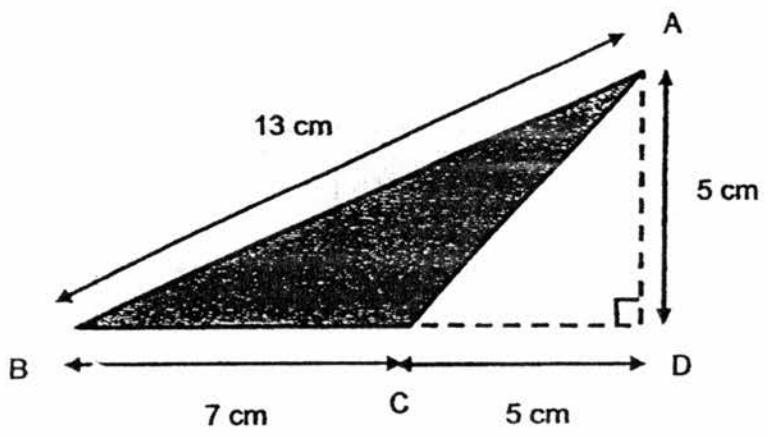


(1) 64 cm³
(2) 96 cm³
(3) 128 cm³
(4) 192 cm³

(Go on to the next page)

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7 What is the area of triangle ABC as shown in the figure?



(1) $17.5\ cm^2$

(2) $30.0\ cm^2$

(3) $32.5\ cm^2$

(4) $45.5\ cm^2$ ( )

8 Mei Lin had \$80. She gave \$20p to her daughter and shared the remainder equally among her 3 sons. How much did each son receive?

(1) $\$(\frac{60p}{3})$

(2) $\$(\frac{80-20p}{3})$

(3) $\$(80-\frac{20p}{3})$

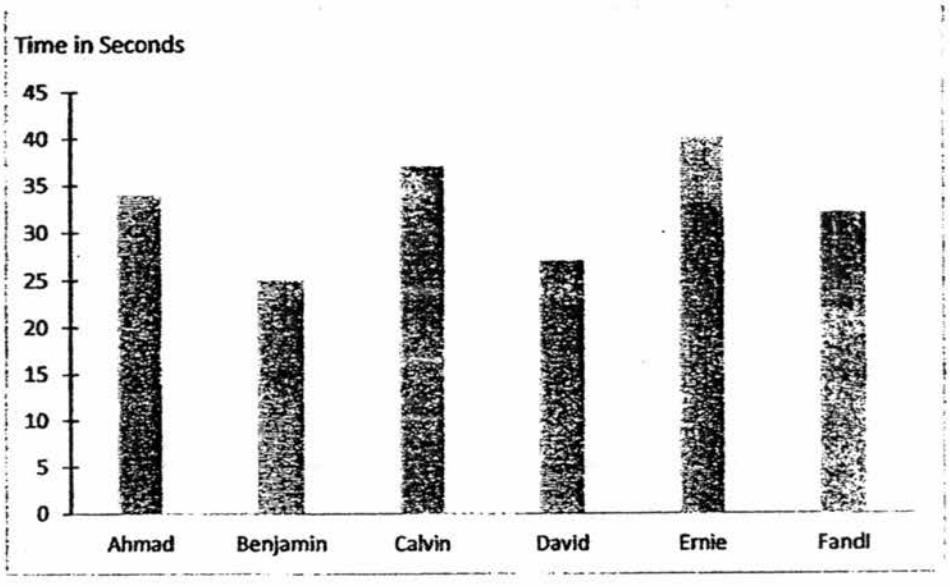
(4) $\$(80-60p)$

( )

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9 The graph below shows the timing of the six boys who competed in the 50 m freestyle.



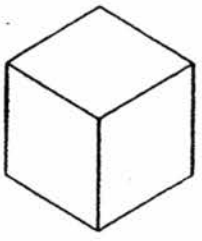
Which 2 boys were the fastest swimmers?

(1) Calvin and Ernie
(2) Ahmad and Ernie
(3) Ahmad and Fandi
(4) Benjamin and David ( )

(Go on to the next page)

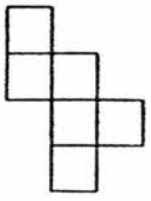
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10 The figure below shows a cube.

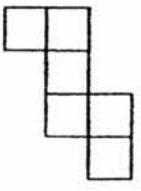


Which one of the following is **not** a net of a cube?

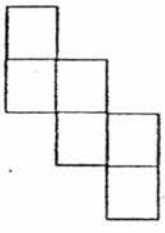
(1)



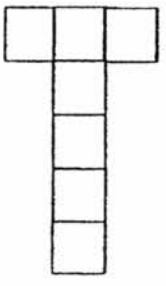
(2)



(3)



(4)



( )

11 Find the sum of 33 ones, 30 tens, 300 hundreds and 3 thousands.

(1) 3363

(2) 3930

(3) 6333

(4) 33 333

( )

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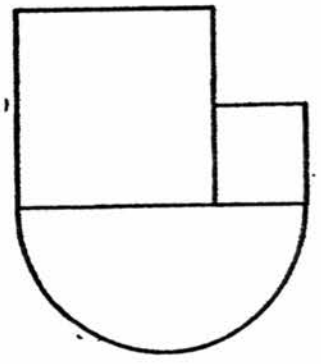
12 The figure below is made up of a semicircle and two squares of sides 10 cm and 4 cm. Find the area of the figure. Give your answer in terms of π.

(1) $(116 + 24.5\,\pi)\ cm^2$

(2) $(116 + 98\,\pi)\ cm^2$

(3) $(34 + 14\,\pi)\ cm^2$

(4) $(34 + 7\,\pi)\ cm^2$



13 Two classes participated at a carnival. Each class had the same number of students. The ratio of the number of girls to the number of boys in class A is 2:3. The ratio of the number of boys to the number of girls in class B is 3:7. What is the ratio of the number of girls to the number of boys at the carnival?

(1) 3 : 2

(2) 9 : 11

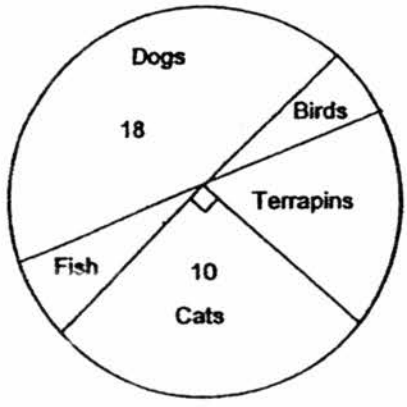
(3) 11 : 9

(4) 14 : 9

(Go on to the next page)

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14 The pie chart represents the favourite animal of the pupils in Primary 6A. There are as many fish as birds. How many pupils chose the terrapins as their favourite animal?



(1) 2
(2) 4
(3) 5
(4) 8

15 Uncle Tan took a walk from his home to the park and back home again. The distance between Uncle Tan's home and the park was 480 m. On the way to the park, he walked at a speed of 40 m/min. Uncle Tan took 20 minutes to walk home from the park. What was his average speed for the whole journey?

(1) 15 m/min
(2) 24 m/min
(3) 30 m/min
(4) 48 m/min

(Go on to Booklet B)

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METHODIST GIRLS' SCHOOL (PRIMARY)

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PRELIMINARY EXAMINATION 2016
PRIMARY 6
MATHEMATICS

PAPER 1
(BOOKLET B)

Total Time for Booklets A and B: 50 minutes

INSTRUCTIONS TO CANDIDATES

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 calculators is **NOT** allowed.

Name: _____ ( )

Class: Primary 6._____

Date: 23 August 2016

Paper 1 Booklet A	**/ 20**
Paper 1 Booklet B	**/ 20**
Paper 2	**/ 60**
TOTAL	**/ 100**

This booklet consists of 6 printed pages including this page.

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Questions **16** to **25** carry 1 mark each. 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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16 Express 2.8 as a percentage.

Ans: _____ %

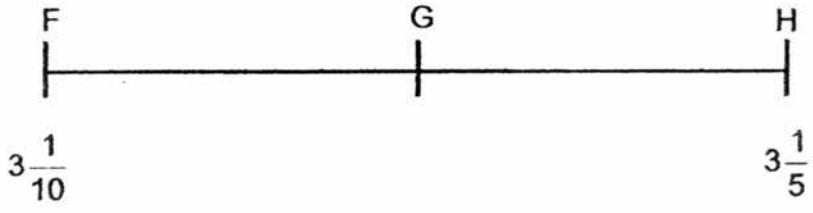
17 Melody spent 25% of her allowance and had $60 left.

How much did she spend?

Ans: $_____

18 In the number line below, FG = GH.

What is the fraction represented by G?



Ans: _____

19 $\frac{5}{12} \times 11 = \frac{5}{12} \times 6 + \frac{5}{12} + \frac{5}{12} + \frac{5}{12} +$ _____

Give your answer in its simplest form.

Ans: _____

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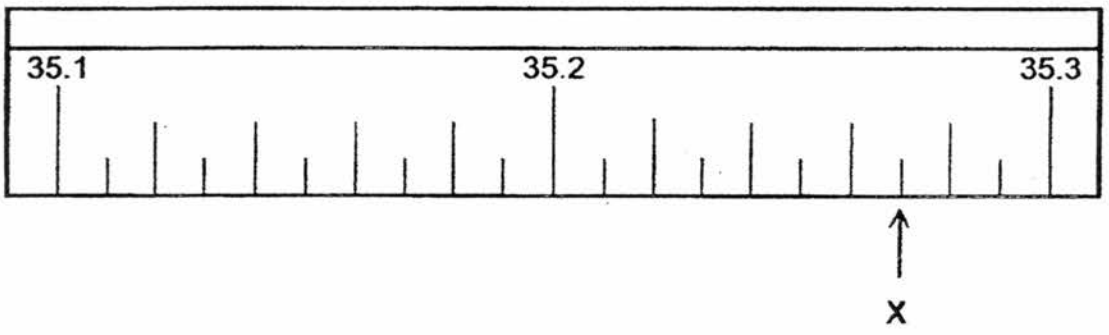
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20 Ali and Muthu had some marbles. After Ali gave 15 marbles to Muthu, he had 20 marbles more than Muthu. How many more marbles did Ali have than Muthu at first?

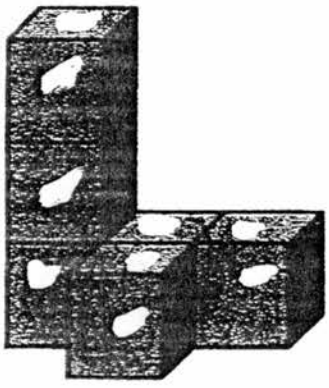
Ans: _____

21 Part of a scale is shown below. What is the value of the reading at **X** ?



Ans: _____

22 The solid below is made up of 6 identical 3-cm cubes.
What is the total surface area of this solid including the base?



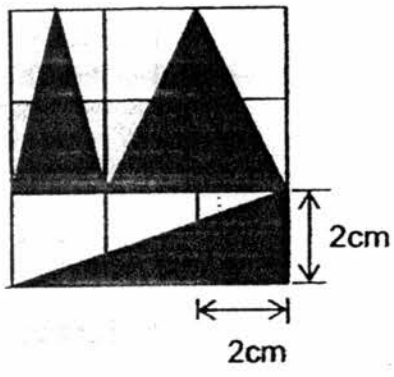
Ans: _____ cm^2

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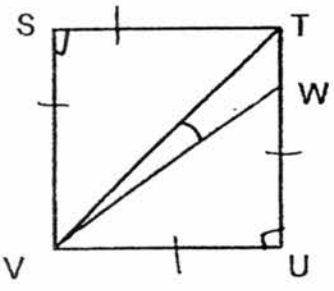
23 There are three shaded triangles on a grid made of 2-cm squares.

What is the total area of the three shaded triangles?



Ans: _____ cm^2

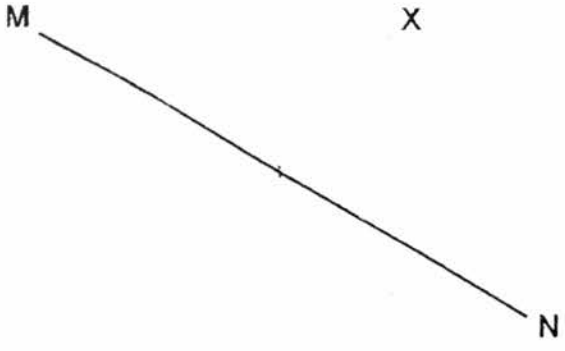
24 In the figure below, STUV is a square and $\angle TVW = 11°$. Find $\angle WVU$.



Ans: _____

25 The figure below shows a line MN and a point X.

Draw a parallel line to MN passing through X.



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Questions 26 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. (10 marks)

Do not write in this space

26 The perimeter of a rectangle is 48 cm. The length of the rectangle is 2 cm longer than its breadth. Find its breadth.

Ans: _____ cm

27 Mrs Lee had $13 in her wallet. She spent all her money on 10 apples and 4 pears. If she had bought 3 apples and 12 pears instead, she would need $7.10 more. What was the cost of one pear?

Ans: $ _____

28 $\frac{2}{5}$ of Aditya's current age is the same as $\frac{3}{7}$ of Hafiz's current age. Hafiz's current age is 70 years old, what was their total age 3 years ago?

Ans: _____

(Go on to the next page)

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29 Sam scored an average of 80 marks for 3 tests. He scored 20 marks more for his Science test than his English test. For the Math test, he scored 5 marks lower than his English test. How many marks did he score for his English test?

Do not write in this space

Ans: _____

30 A library classifies its books as fiction, non-fiction and reference books.

$\frac{1}{3}$ of the books are fiction books. The ratio of non-fiction books to reference books is 4 : 1. What is the ratio of the number of fiction books to the number of reference books?

Ans: _____

End of Booklet B

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METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

PRELIMINARY EXAMINATION 2016
PRIMARY 6
MATHEMATICS

PAPER 2

Duration: 1hour 40 minutes

INSTRUCTIONS TO CANDIDATES

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 an approved calculator is expected, where appropriate.

Name: _____ ( )

Class: Primary 6._____

Date: 23 August 2016

/60

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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)

Do not write in this space

1 Tree A is y m tall. Tree B is twice as tall as Tree A.
Tree C is 5 cm taller than Tree B.

(a) What is the total height of the three trees in terms of y?

(b) If Tree A is 1.5 m tall, what is the height of Tree C?

Ans: (a) _____ m

(b) _____ m

2 Mr. Tey travelled at a constant speed of 80 km/h for 45 min, and covered $\frac{3}{5}$ of his journey from Town A to Town B.
Find the distance for the whole journey.

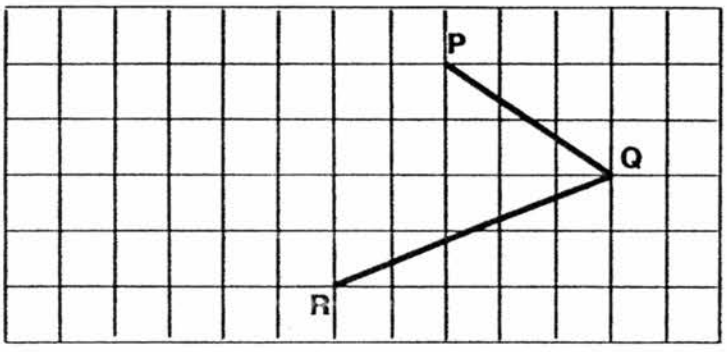
Ans: _____ km

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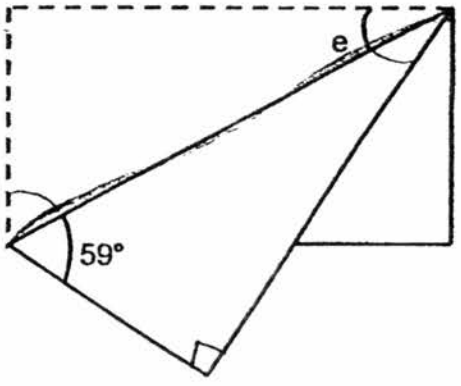
3 PQ and QR are two sides of a parallelogram.
Complete the parallelogram PQRS by drawing the other two sides in the square grid below.

Do not write in this space



4 A rectangular piece of cardboard was folded as shown below.

Find ∠e.



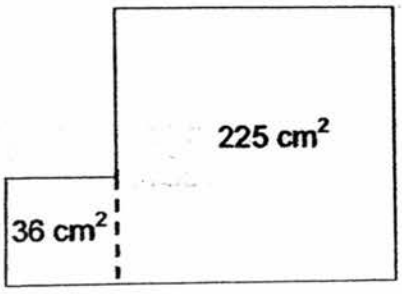
Ans: _____ °

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5 The figure below is made up of two squares. Find the perimeter of the figure.

Do not write in this space



Ans: _____cm

(Go on to the next page)

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For Questions **6** to **18**, 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. **(50 marks)**

Do not write in this space

6 A machine printed a total of 6 000 newsletters for the first 5 days. When the machine was upgraded, it printed 1 800 newsletters per day. How many days in all did the machine take to print 34 800 newsletters?

Ans: _____ [3]

7 A group of girls shared some sweets among themselves. If each girl took 11 sweets, the last girl would have only 6 sweets. If each girl took 8 sweets, there were 25 sweets left over.

(a) How many girls were there?

(b) How many sweets were there?

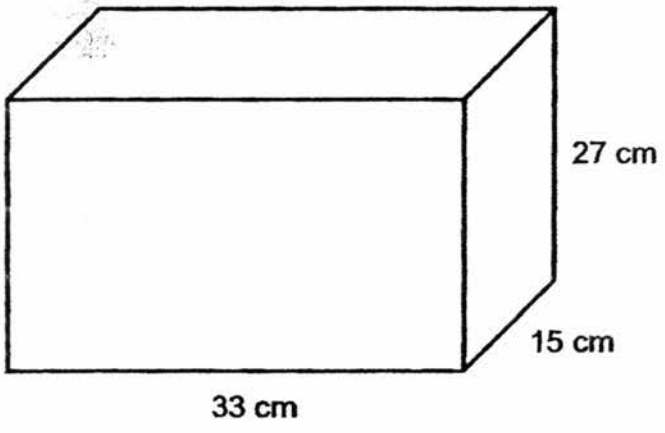
Ans: (a) _____ [2]

(b) _____ [1]

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8 Anne needs to pack 6-cm cubes into a box measuring 33 cm by 15 cm by 27 cm as shown below. What is the volume of the remaining space in the box after the maximum number of cubes have been packed in?



Do not writ in this spac

Ans: _____ [3]

(Go on to the next page)

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9 Mrs. Lim gave $\frac{7}{10}$ of her stickers to Dolly and the rest to Hong. After Dolly gave Hong $\frac{1}{5}$ of her stickers, Dolly had 24 stickers more than Hong. How many stickers did Dolly give to Hong?

Ans: _____ [3]

10 Melissa had some money. She used $\frac{1}{4}$ of it on a bag and $\frac{1}{6}$ of the remainder on a dress. The bag and the dress cost $133.50 altogether. How much money had she left?

Ans: _____ [3]

(Go on to the next page)

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11 Lance left Town X and drove towards Town Y. Along the way, he met Ali who was driving at a speed of 80 km/h in the opposite direction.
45 minutes later, Lance reached Town Y but Ali was still 50 km from Town X.
Both did not change their speed throughout.
Lance took 2 hours to complete the whole journey.

Do not write in this space

(a) What was Lance's speed?

(b) What was the distance between Town X and Town Y?

Ans: (a) _____ [3]

(b) _____ [1]

(Go on to the next page)

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12 Mr Lee bought four times as many ties as wallets. He spent $840 altogether. A wallet cost $50 more than a tie. The total cost of the ties was $184 more than the total cost of the wallets. How many wallets did he buy?

Do not write in this space

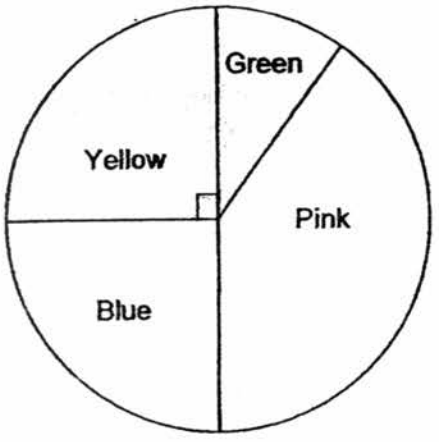
Ans: _____ [4]

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13 The pie chart shows the number of coloured ribbons.
The ratio of the number of green ribbons to the number of pink ribbons is 1 : 4.

Do not write in this space



(a) What percentage of the ribbons was green?

(b) If there were 45 more yellow than green ribbons, how many blue and pink ribbons were there?

Ans: (a) _____ [1]

(b) _____ [3]

(Go on to the next page)

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14 A box contained apples, oranges and pears. The ratio of the number of apples to the number of oranges was 7 : 2. The number of pears was $\frac{5}{6}$ of the total number of apples and oranges.
After some apples were eaten, the total number of apples and oranges was equal to the number of pears. There were 180 fruits left in the box in the end.
How many apples were eaten?

Do not write in this space

Ans: _____ [4]

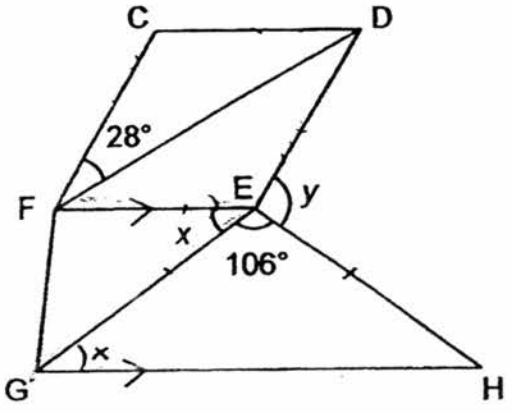
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15 In the figure, CDEF is a rhombus and EFGH is a trapezium.
$\angle CFD = 28°$ and $\angle GEH = 106°$

(a) Find $\angle x$.

(b) Find $\angle y$.



Do not write in this space

Ans: (a) _____ [1]

(b) _____ [3]

(Go on to the next page)

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16 Christine and Audrey went shopping together with a total sum of $60. Christine spent twice as much as Audrey. The amount Audrey had left was $7 more than what she had spent. She had twice as much money left as Christine.

(a) How much money did Audrey spend?

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

Do not write in this space

Ans: (a) _____ [3]

(b) _____ [2]

(Go on to the next page)

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17 Mdm Yani made some cushions to sell at a funfair. She made 25% of the cushions in the first week. In the second week, she made another 28 cushions. The number of cushions made in the first and second week was 40% more than the number of cushions that had not yet been made. She made the rest of the cushions in the third week.

(a) How many cushions did Mdm Yani make in the third week?

(b) How many cushions did Mdm Yani make altogether?

Do not write in this space

Ans: (a) _____ [3]

(b) _____ [2]

(Go on to the next page)

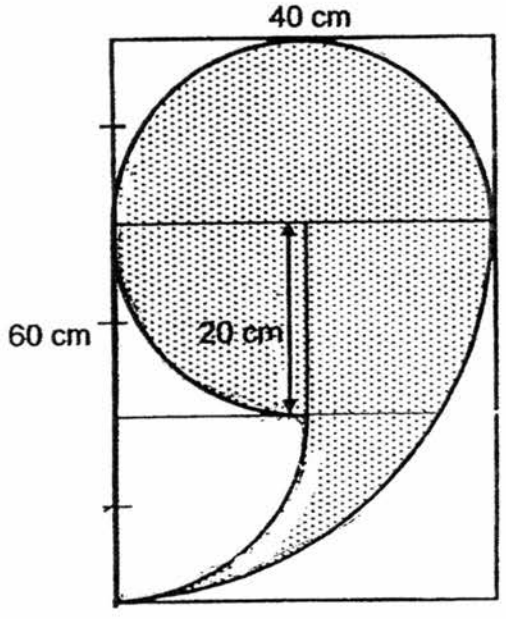
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18 The shaded figure below is cut out from a rectangle measuring 60 cm by 40 cm.

(a) Find the area of the shaded part.

(b) Find the perimeter of the shaded part.

(Round off your answers to (a) and (b) to 2 decimal places)



Do not write in this space

Ans: (a) _____ [3]

(b) _____ [2]

END OF PAPER

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YEAR	:	**2016**
LEVEL	:	**PRIMARY 6**
SCHOOL	:	**METHODIST GIRLS' SCHOOL**
SUBJECT	:	**MATHEMATICS**
TERM	:	**PRELIMINARY EXAMINATION**

Paper 1

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

Q16 280 %

Q17 $20

Q18 $3\frac{3}{20}$

Q19 $11 - 6 = 5$
$5 - 3 = 2$
$\frac{5}{12} + \frac{5}{12} = \frac{10}{12} \Rightarrow \frac{5}{6}$

Q20 $15 + 20 + 15 = \underline{50}$ marbles

Q21 35.27

Q22 Area of 1 surface $\rightarrow 3 \times 3 = 9$
$13 \times 2 = 26$
$26 \times 9 = \underline{234\ cm^2}$

Q23 $8 + 4 + 6 = \underline{18\ cm^2}$

Q24 $(180° - 90°) \div 2 = 45°$
$\angle WVU \rightarrow 45° - 11° = \underline{34°}$

Q25



Q26 $4u + 4 \rightarrow 48$
$4u \rightarrow 48 - 4 = 44$
$1u \Rightarrow 44 \div 4 = \underline{11\ cm}$

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Q27 $10A + 4P \rightarrow 13$
$3A + 12P \rightarrow 13 + 7.10 = 20.10$
$30A + 12P \rightarrow 13 \times 3 = 39$
$30A + 12P \rightarrow 20.10 \times 10 = 201$
$108P \rightarrow 201 - 39 = 162$
$1P \Rightarrow 162 \div 108 = \underline{\$1.50}$

Q28 $14u \rightarrow 70$
$1u \rightarrow 70 \div 14 = 5$
$H \rightarrow 70 - 3 = 67$
$A \rightarrow 5 \times 15 = 75 \rightarrow 75 - 3 = 72 \Rightarrow 67 + 72 = \underline{139}$

Q29 $240 - 20 - 5 - 5 = 210 \rightarrow 210 \div 3 = 70 \Rightarrow$
$70 + 5 = \underline{75}$ marks

Q30 5 : 2

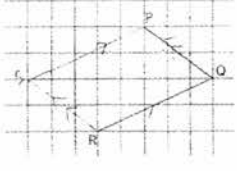
Paper 2

Q1a $A \rightarrow y$
$B \rightarrow y \times 2 = 2y$
$C \rightarrow 2y + 0.05$
Total $\Rightarrow y + 2y + 2y + 0.05 = \underline{(5y + 0.05)\ m}$

Q1b $y \rightarrow 1.5$
$C \rightarrow 2y + 0.05 \rightarrow (1.5 \times 2) + 0.05 = \underline{3.05\ m}$

Q2 100 km

Q3



Q4 $\angle e \rightarrow 180° - 90° - 59° = 31°$

Q5 72 cm

Q6 $34800 - 6000 = 28800$
$28800 \div 1800 = 16$
$16 + 5 = \underline{21}$ days

Q7a $11 - 8 = 3$
$11 - 6 = 5$
$25 + 5 = 30$
$30 \div 3 = \underline{10}$ girls

Q7b $(10 \times 8) + 25 = \underline{105}$ sweets

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Q8 $33 \div 6 = 5r3$
$15 \div 6 = 2r3$
$27 \div 6 = 4r3$
No. of cube $\rightarrow 5 \times 2 \times 4 = 40$
Vol. of 1 cube $\rightarrow 6 \times 6 \times 6 = 216$
Vol. of 40 cube $\rightarrow 40 \times 216 = 8640$
Capacity $\rightarrow 33 \times 15 \times 27 = 13365 \Rightarrow 13365 - 8640 =$ <u>4725 cm^3</u>

Q9 D $\rightarrow \frac{7}{10}$
H $\rightarrow 1 - \frac{7}{10} = \frac{3}{10}$
D (left) $\rightarrow \frac{8}{10} \times \frac{7}{10} = \frac{14}{25}$
D (gave) $\rightarrow \frac{2}{10} \times \frac{7}{10} = \frac{7}{50}$
H (end) $\rightarrow \frac{3}{10} \times \frac{7}{50} = \frac{11}{25}$
$\frac{14}{25} - \frac{11}{25} = \frac{3}{25}$
$\frac{3}{25} \rightarrow 24 \div 3 = 8$
$50 \div 25 = 2$
$7 \div 2 = 3.5$
$8 \times 3.5 =$ <u>28</u> stickers

Q10 B + D $\rightarrow$ 2u + 1u = 3u
3u $\rightarrow$ 133.5
1u $\rightarrow 133.5 \div 3 = 44.5$
5u $\rightarrow 44.5 \times 5 =$ <u>$222.50</u> left

Q11a $\frac{3}{4} \times 80 = 60$
$60 + 50 = 110$
$110 \div 1\frac{1}{4} =$ <u>88 km/h</u>

Q11b $88 \times 2 =$ <u>176 km</u>

Q12 4T $\rightarrow$ 512 & 1W $\rightarrow$ 328
1T $\rightarrow 512 \div 4 = 128$
Diff $\rightarrow 3288 - 128 = 200$
$200 \div 50 =$ <u>4 wallets</u>

Q13a $\frac{1}{2} \rightarrow$ 1u + 4u = 5u
$5u \times 2 = 10u$
$\frac{1}{10} \times 100\% =$ <u>10%</u>

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Q13b $Y \rightarrow \frac{1}{4} \times 100\% = 25\%$
$25\% - 10\% = 15\%$
$15\% \rightarrow 45$
$1\% \rightarrow 45 \div 15 = 3$
$B + P \rightarrow 100\% - 25\% - 10\% = 65\%$
$65\% \Rightarrow 3 \times 65 = \underline{195}$ ribbons

Q14 A: 14 O: 4 P:15
A + O : P
15 : 15 (3ou)
$30u \rightarrow 180$
$1u \rightarrow 180 \div 30 = 6$
$30u - 15u - 4u = 11u$
$14u - 11u = 3u$
$3u \rightarrow 6 \times 3 = \underline{18 \text{ apples}}$

Q15a $\angle x \rightarrow (180° - 106°) \div 2 = \underline{37°}$

Q15b $\angle DEF \rightarrow 180° - 28° - 28° = 124°$
$\angle y \rightarrow 360° - 106° - 37° - 124° = \underline{93°}$

Q16a $9u \rightarrow 60 - 7 - 3.5 = 4.94$
$1u \rightarrow 49.5 \div 9 = 5.5$
$2u \rightarrow 5.5 \times 2 = \underline{\$11}$ spent

Q16b $5.5 \times 5 = 27.5$
$27.5 + 3.5 = \underline{\$31}$

Q17a 14 : 10 : 24
$24 \div 4 = 6$
$14 - 6 = 8$
$8u \rightarrow 28$
$1u \rightarrow 28 \div 8 = 3.5$
$10u \rightarrow 3.5 \times 10 = \underline{35}$ cushions

Q17b $24u \rightarrow 3.5 \times 24 = \underline{84}$ cushions

Q18a $\frac{1}{4} \times \pi \times 40 \times 40 = 400\pi$, $40 \times 40 = 1600$ $(1600 - 400\pi)$
$20 \times 20 = 400$, $\frac{1}{2} \times 20 \times 20 \times \pi = 200$, $40 \times 20 = 800$ $(800 - 200\pi)$
$40 \times 60 = 2400 \rightarrow 2400 - (1600 - 400\pi) - 400 - (800 - 200\pi) \approx 1484.96 \text{ cm}^2$

Q18b $\frac{1}{2} \times \pi \times d = \frac{1}{2} \times \pi \times 40 = 20\pi$
$\pi \times d = \pi \times 40 = 40\pi$
$40\pi + 20\pi = 60\pi$
$60\pi = 188.495 \approx \underline{188.50 \text{ cm}}$

End

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