PRELIM

# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

## PRELIMINARY EXAMINATION 2017
## 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: 22 August 2017

| |
|---|
| /20 |

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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 Round off 145.105 to the nearest hundredth.

(1) 140 000
(2) 145.100
(3) 145.110
(4) 150 000

2 Which of the following is the most likely height of the desk in a classroom?

(1) 7 cm
(2) 7 m
(3) 70 cm
(4) 70 m

3 Sally paid $12 for 30 identical pencils. What was the cost of each pencil?

(1) $0.04
(2) $0.25
(3) $0.40
(4) $2.50



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4 Which one of the following fractions is less than $\frac{1}{3}$?

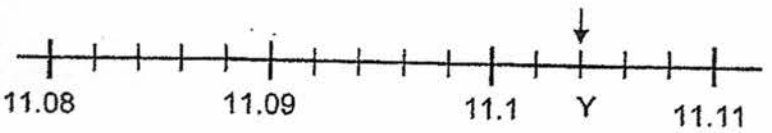
(1) $\frac{4}{10}$

(2) $\frac{4}{11}$

(3) $\frac{4}{12}$

(4) $\frac{4}{13}$

5 In the scale below, what is the value of Y?




(1) 11.12

(2) 11.14

(3) 11.102

(4) 11.104

6 Express 36 minutes as a percentage of 2 hours.

(1) 18%

(2) 30%

(3) 36%

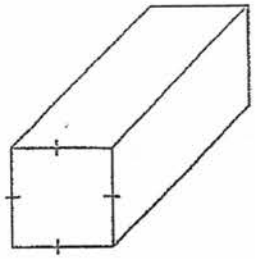
(4) 60%



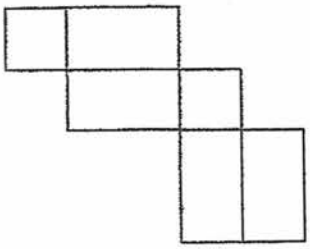
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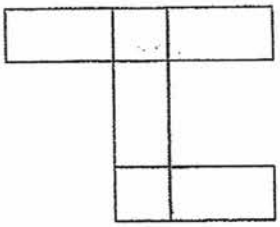
7 Which of the following is not a net of the solid below?



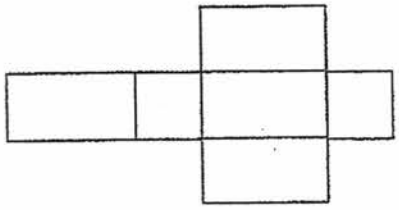
(1)



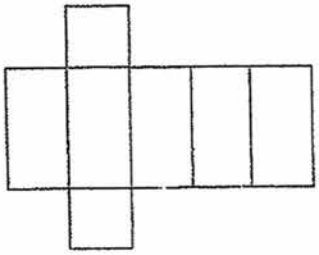
(2)



(3)



(4)





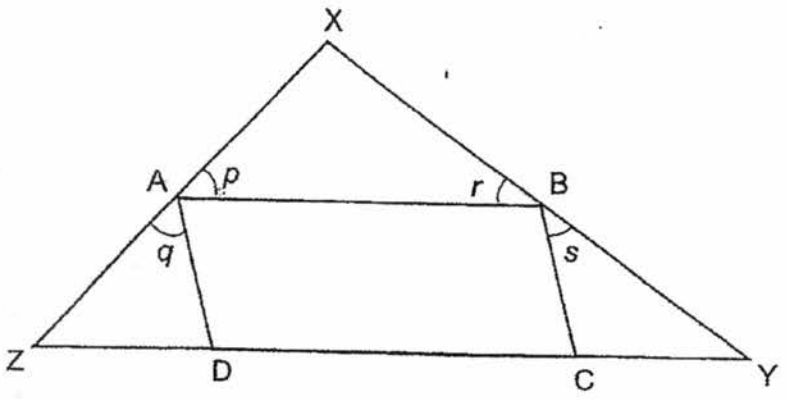
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8 Find the value of $\frac{17b}{5} - 2b + 3$ when $b = 4$.

(1) 4.4
(2) 8.6
(3) 14.6
(4) 15

9 In the figure below, ABCD is a parallelogram and XYZ is a triangle. Find the value of $\angle p + \angle q + \angle r + \angle s$.




(1) 180°
(2) 270°
(3) 360°
(4) 540°

10 Mrs Lim bought 1.4 m of ribbon to make 5 bows. What was the length of the ribbon used for each bow?

(1) 0.28 cm
(2) 2.80 cm
(3) 28 cm
(4) 280 cm



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11 There are 54 girls and 36 boys in a school choir. All of them are arranged such that there are the same number of pupils in each row. Each row is made up of either all girls or all boys.
What is the greatest number of pupils in each row?

(1) 9
(2) 6
(3) 3
(4) 18

12 Shu Ning bought $\frac{5}{6}$ kg of minced meat. She gave $\frac{1}{4}$ of it to her neighbour and $\frac{1}{3}$ of the remainder to Ali. How much minced meat had Shu Ning left?

(1) $\frac{1}{4}$ kg
(2) $\frac{1}{2}$ kg
(3) $\frac{5}{12}$ kg
(4) $\frac{5}{24}$ kg

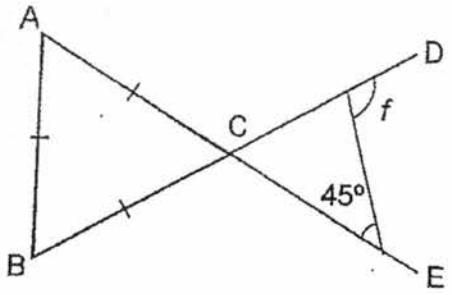
13 There were 1600 participants at a conference. 80% of them were female. Some female participants left the conference and the ratio of the number of female participants to the number of male participants became 7 : 4. How many female participants left the conference?

(1) 320
(2) 560
(3) 720
(4) 960



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14 In the figure below, ABC is an equilateral triangle. AE and BD are straight lines. Find $\angle f$.




(1) 45°

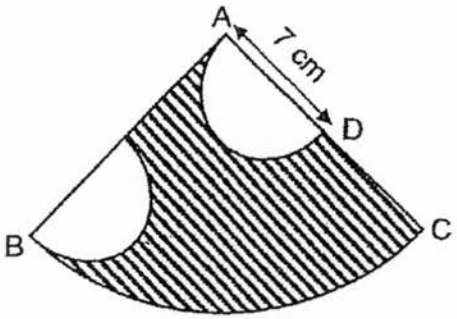
(2) 75°

(3) 105°

(4) 120°

15 The figure below is made up of a quadrant and 2 identical semicircles. AC is twice of AD. What is the perimeter of the shaded figure below?

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




(1) 44 cm

(2) 47 cm

(3) 51 cm

(4) 58 cm



(Go on to Booklet B)

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# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

## PRELIMINARY EXAMINATION 2017
## 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: 22 August 2017

Parent's Signature: _____

| | |
|---|---|
| Paper 1 Booklet A | / 20 |
| Paper 1 Booklet B | / 20 |
| Paper 2 | / 60 |
| TOTAL | / 100 |

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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)

Do not write in this space

16 Write one million, twenty thousand and three in numerals.

Ans: _____

17 Find the value of 7 056 ÷ 7.

Ans: _____

18 A : B = 5 : 6 and B : C = 2 : 5. What is the ratio of A : C ?

Ans: _____



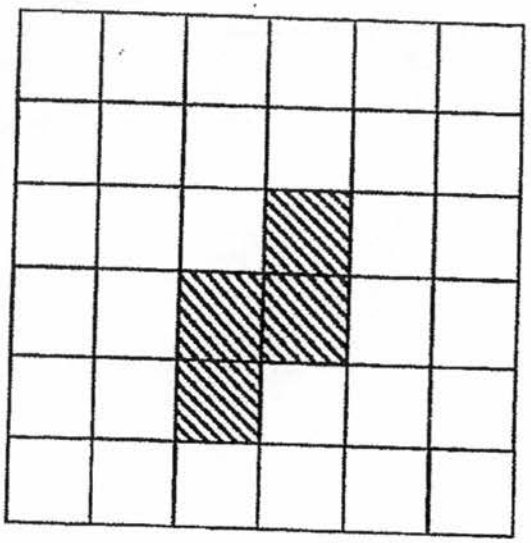
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19 The shaded figure below shows an incomplete net of a cube. Shade the square(s) needed to complete the net of a cube.

Do not write in this space



20 The average of 5 numbers is 8. When one of the numbers was removed, the average became 9. What is the value of the number that was removed?

Ans: _____



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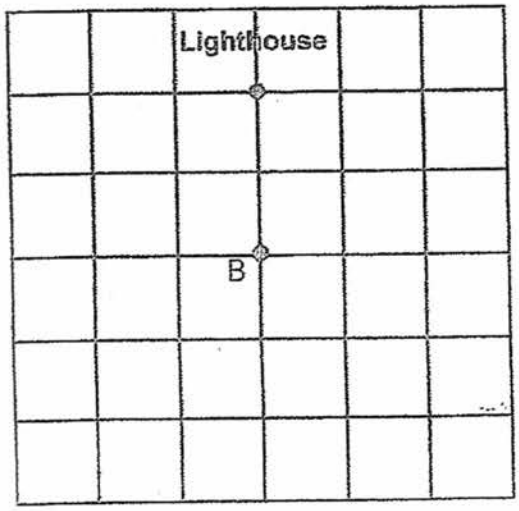
21 Express $\frac{1}{11}$ as a decimal to 2 decimal places.

Ans: _____

22 Find the value of $2\frac{4}{9} - \frac{2}{3}$. Give your answer as a mixed number in its simplest form.

Ans: _____

23 In the diagram, a ship is at point B facing the lighthouse. The lighthouse is north of the ship. The captain of the ship turns the ship 135° anticlockwise. Which direction is the ship facing now?




Ans: _____



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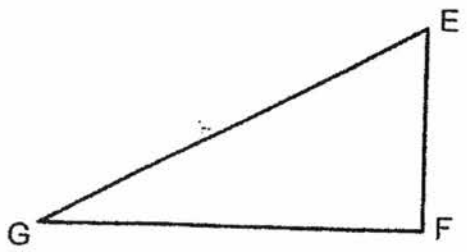
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24 A cheetah can run at an average speed of 120 km/h. How long will it take for the cheetah to run a 42-km marathon?

Do not write in this space

Ans: _____ min

25 The figure below shows a right-angled triangle EFG.
Construct 2 lines, HG and HE, such that $\angle HGE = 40°$ and HEFG is a trapezium.






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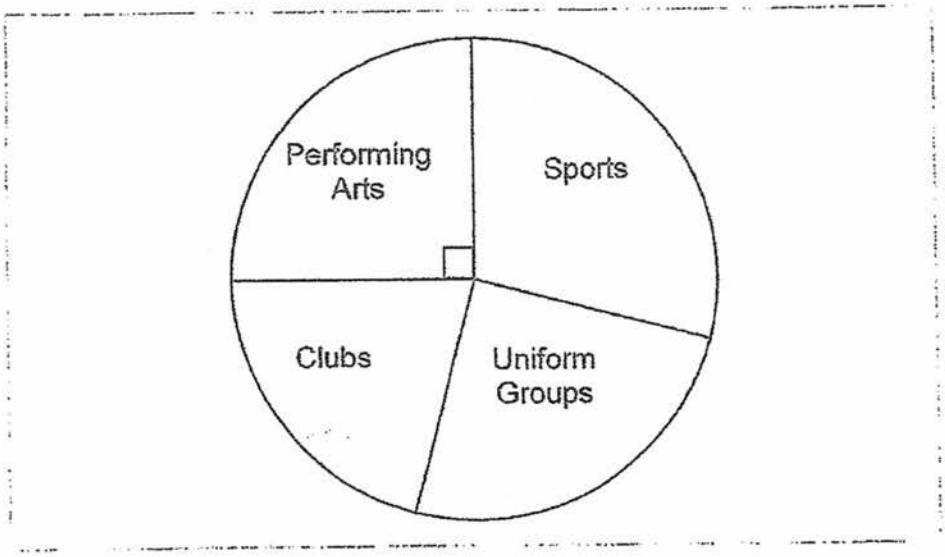
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Questions 26 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

Do not write in this space

26 The pie chart below shows the Co-curricular Activities (CCA) that the Primary 6 pupils of Sophia Primary School participated in. There are 240 pupils in Primary 6. The number of pupils who participate in the Performing Arts and the Uniformed Group are the same.




(a) What fraction of the pupils participated in the Performing Arts and Uniformed Groups?

Ans: _____

(b) 20% of the pupils were in the Clubs CCA. How many pupils participated in Sports?

Ans: _____



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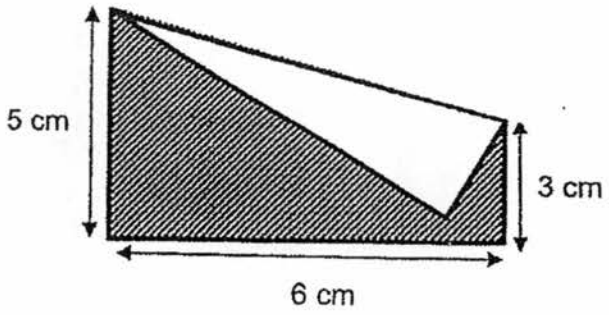
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27 There were two boxes containing yellow and red beads. Each box had the same total number of beads. In Box A, the ratio of the number of yellow beads to the number of red beads was 5 : 1. In Box B, the ratio of the number of yellow beads to the number of red beads was 6 : 1. All the beads were then transferred into an empty container. What was the ratio of the number of yellow beads to the number of red beads in the container in the end?

Do not write in this space

Ans: _____

28 A rectangle piece of paper is folded at one of the corners as shown in the diagram below. Find the area of the shaded part.




Ans: _____ $cm^2$



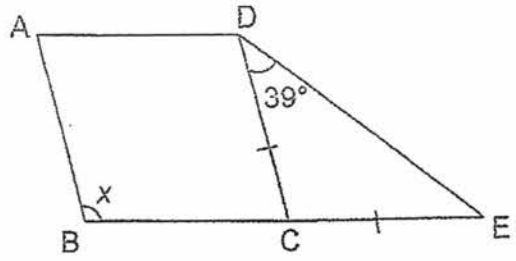
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29 In the figure below, ABCD is a rhombus and CDE is an isosceles triangle. $\angle CDE = 39°$ and BCE is a straight line. Find $\angle x$.

Do not write in this space




Ans: _____ °

30 What is the greatest number of cuboids 5 cm by 3 cm by 3 cm that can fit into a carton 40 cm by 30 cm by 20 cm?

Ans: _____

End of Paper



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# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

## PRELIMINARY EXAMINATION 2017
## 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: 22 August 2017

Parent's Signature: _____

60

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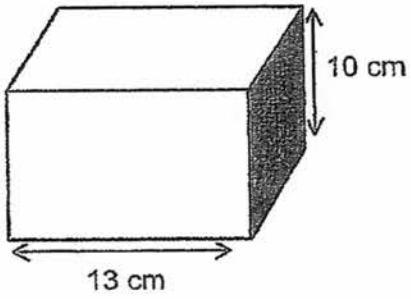
Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

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1 The average mass of Mark, Steven and Raju is 65 kg. The mass of each of these 3 boys is a whole number. Mark and Steven have the same mass. Raju's mass is less than 71 kg.
What is the largest possible mass of Raju?

Ans: _____ kg

2 The figure below shows a cuboid. The volume of the cuboid is 780 $cm^3$.
Find the perimeter of the shaded face of the cuboid.



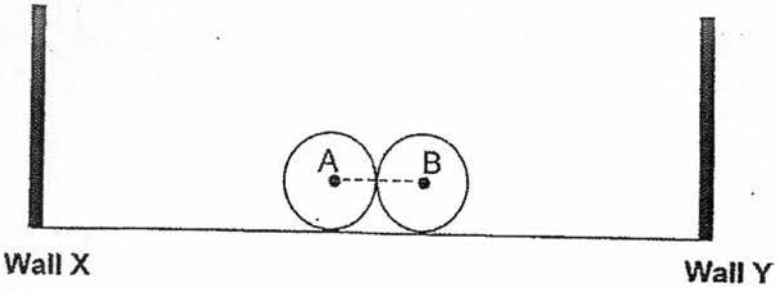

Ans: _____ cm



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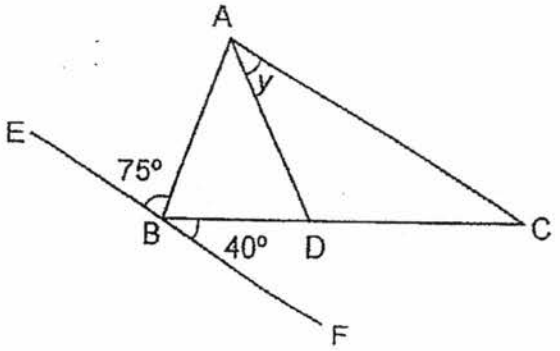
3 Two wheels, with centres A and B, are rolled along a straight line in opposite directions. Each wheel makes 3 completed revolutions before touching Wall X and Wall Y. The diameter of each wheel is 62 cm.
What is the distance between Wall X and Wall Y in terms of $\pi$?

Do not write in this space




Ans: _____ cm

4 In the figure below, ABC is a triangle and EBF is a straight line.
AC is parallel to EF and AB = AD. Find $\angle y$.




Ans: _____ °



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5 Mrs Raju bought some files. She gave 100 files to her pupils and $\frac{3}{7}$ of the remainder to Ms Lim. The number of files left was $\frac{1}{3}$ of the number of files she had at first. How many files did Mrs Raju buy at first?

Do not write in this space

Ans: _____



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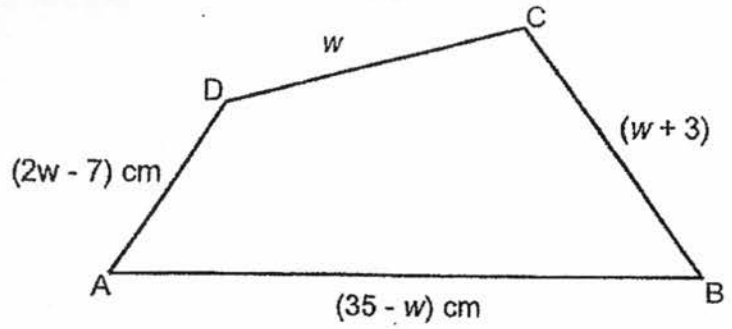
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For Questions **6** to **18**, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (50 marks)

Do not write in this space

6 A 2-m string was used to form the figure below.




(a) Express the length of the string that was used to form the figure in terms of $w$.

(b) If $w = 4$, what was the length of the remaining string?
Give your answer in centimetres.

Ans: (a) _____ [1]

(b) _____ [2]



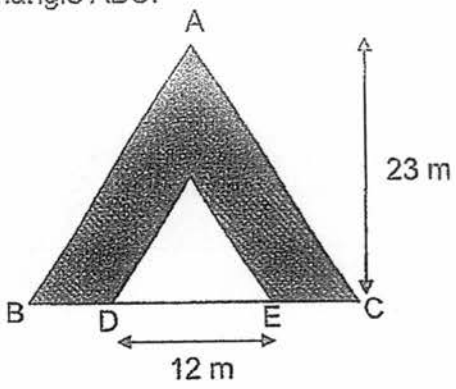
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7 The figure below is made up of 2 triangles. The ratio of the length of BD to the length of DE to the length of EC is 2 : 3 : 2. DE is 12 cm. The shaded area of the figure is 60% of the area of Triangle ABC.
What is the area of the unshaded part?

Do not write in this space




Ans: _____ [3]

8 Tank X with a rectangular base measuring 120 cm by 80 cm was filled with water to a height of 15 cm. When 30 $\ell$ of water was removed from the tank, the water level dropped to $\frac{3}{5}$ of the height of the tank.
What was the capacity of the tank?

Ans: _____ [3]



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9 Mary went to the market and bought 650 g of cod, 0.6 kg of prawns and 1 080 g of squid. She gave the fishmonger $100. How much change did Mary receive? Give your answer to the nearest ten-cent.

Do not write in this space

| Seafood | Price per kg |
|---|---|
| Prawns | $23.50 |
| Cod | $68.00 |
| Squid | $17.25 |

Ans: _____ [3]

10 John left Admiralty Town at 11.30 a.m. for Bukit Town which was 35 km away. At the same time, Bala left Bukit Town for Admiralty Town. Bala's speed was 16 km/h faster than John's speed. They travelled along the same route. Fifteen minutes later, they were 10 km apart, after passing each other. Find Bala's average speed.

Ans: _____ [3]



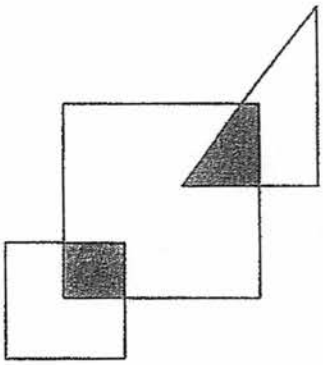
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11 The figure below is made up of 2 squares and a triangle. $\frac{1}{4}$ of the smaller square is shaded and $\frac{1}{3}$ of the triangle is shaded. The ratio of the area of the small square to the area of the big square to the area of the triangle is 1 : 3 : 2. What fraction of the big square is shaded?

Do not write in this space



Ans: _____ [4]



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12 Ahmad and David collected some toy cars. The ratio of the number of Ahmad's toy cars to the number of David's toy cars was 8 : 11. Both of them gave away an equal number of toy cars. In the end, the ratio of the number of Ahmad's toy cars to the number of David's toy cars became 9 : 14. What percentage of his toy cars did Ahmad give away?

Do not write in this space

Ans: _____ [4]



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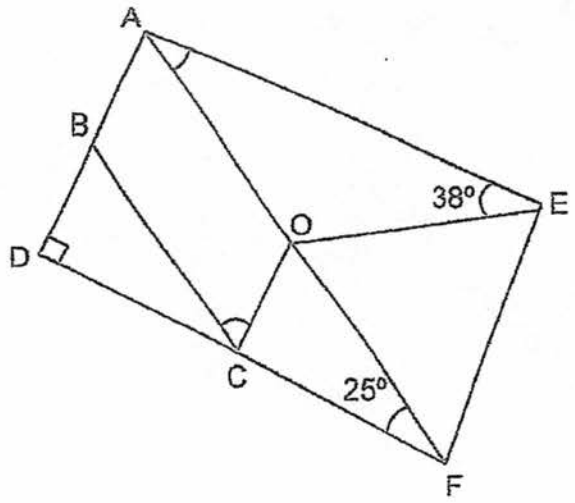
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13 In the figure below, OABC is a parallelogram and OA = OE = OF. ADF is a right-angled triangle and AOF is a straight line.

(a) Find ∠OCB.

(b) Find ∠CFE.




Do not write in this space

Ans: (a) _____ [2]

(b) _____ [2]



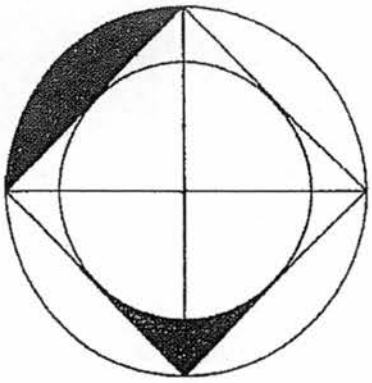
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14 The figure below is made up of a big circle, a small circle and a square. The corners of the square touch the circumference of the big circle. The radius of the small circle is 8 cm. The area of the square is 256 cm². Find the area of the shaded part. (Take $\pi = 3.14$)

Do not write in this space



Ans: _____ [4]

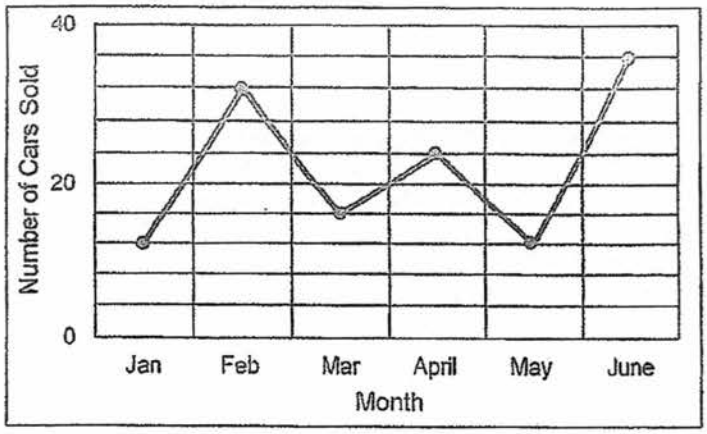


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15 The line graph below shows the sale of cars in a showroom from January to June. Study the graph and answer the questions.

Do not write in this space




(a) Between which 2 months was there the biggest drop in the sale of cars?

(b) In which month, was the sale of cars $1\frac{1}{2}$ times that of March?

(c) What was the average number of cars sold per month from January to June?

Ans: (a) _____ and _____ [1]

(b) _____ [1]

(c) _____ [2]



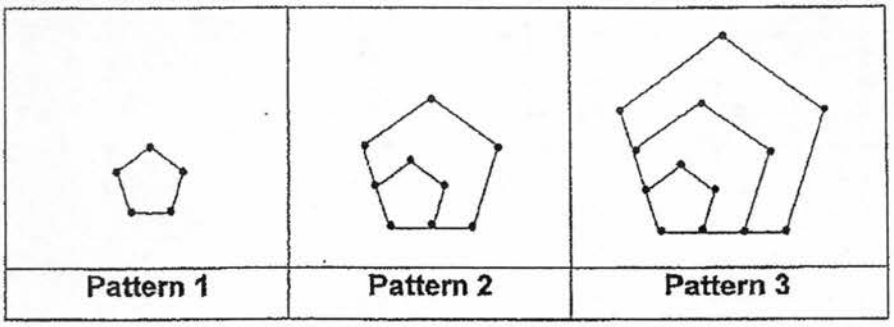
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16 The pattern below shows a series of hexagons which are made using beads and strings. Study the pattern and answer the questions that follow.

Do not write in this space



| Pattern 1 | Pattern 2 | Pattern 3 |
|---|---|---|

(a) How many beads are there in Pattern 5?

(b) Which pattern number will have 253 beads?

(c) Ahmad wants to make a pattern consisting of 43 hexagons. He has 151 beads. How many more beads does he need?

Ans: (a) _____ [1]

(b) _____ [2]

(c) _____ [2]



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17 In a library, there were 160 books on Bookshelf A. Bookshelf B had 15% fewer books than Bookshelf A. The librarian added more books to Bookshelf B and the number of books on Bookshelf B increased by 25%. Some books from Bookshelf A were borrowed by some children and the number of books on Bookshelf A decreased by 10%.

(a) How many books were there on Bookshelf B after the librarian had added more books?

(b) (i) Was there an overall increase or decrease in the total number of books?

(ii) What was the percentage increase or decrease in the total number of books? Give your answer correct to the nearest whole number.

Ans: (a) _____ [2]

(b) (i) _____ [1]

(ii) _____ [1]



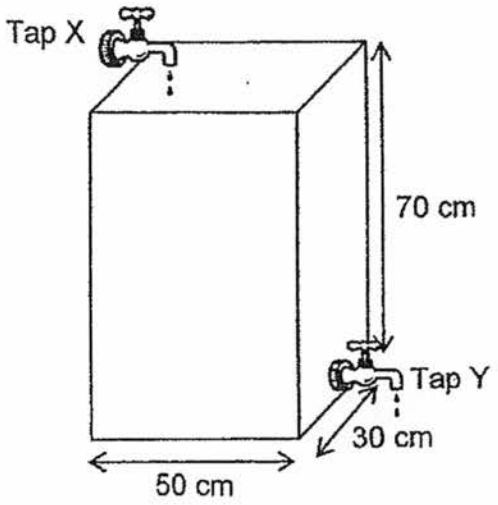
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18 A tank measuring 50 cm by 30 cm by 70 cm was completely filled with water at first. Tap Y was then turned on and water flowed out at a rate of 1.2 $\ell$ per minute. After 10 minutes, Tap X was turned on and water filled the tank at a rate of 800 $cm^3$ per minute. Tap Y was still running when Tap X was turned on. Find the height of the water in the tank after Tap X had been running for 30 minutes.

Do not write in this space




Ans: _____ [5]

END OF PAPER



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PRELIMINARY EXAM PAPER 2017

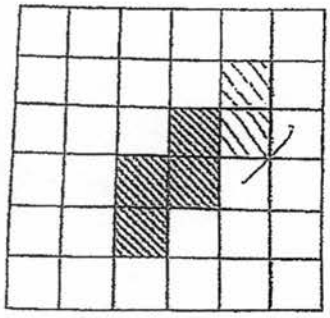
SCHOOL : METHODIST GIRLS' PRIMARY SCHOOL
SUBJECT : PRIMARY 6 MATH PAPER 1 BOOKLET A & B
TERM : PRELIMINARY EXAMINATION 2017

**Paper 1**
**Booklet A:**
Answer:

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 3 | 3 | 4 | 4 | 2 | 2 | 2 | 1 | 3 |

| Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|
| 4 | 3 | 3 | 3 | 4 |

**Paper 1**
**Booklet B:**
16) Ans: 1020003 17) Ans: 1008 18) 1: 3
19)

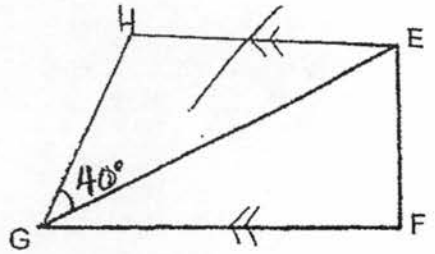


20) Ans: 4
21) Ans: 0.09
22) Ans: $1\frac{7}{9}$
23) Ans: South-West
24) Ans: 21 min

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25)




26a) Ans: $\frac{1}{2}$

26b) Ans:72

27) Ans: 71:13

28) Ans: $18cm^2$

29) Ans: 102°

30) Ans: 520

END



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MGS

PRELIMINARY EXAM PAPER 2017

SCHOOL : METHODIST GIRLS' PRIMARY SCHOOL
SUBJECT : PRIMARY 6 MATH PAPER 2
TERM : PRELIMINARY EXAMINATION 2017

**PAPER 2 ANSWER**

Question 1:
65 x 3= 195
195- 69= 126
126 ÷ 2= 63
Answer: 69kg

Question 2:
780 ÷ 3 ÷ 10 = 6
6+ 10+ 6+ 10= 32
Answer: 32cm

Question 3:
$62\pi$ x 6 +62 + 62= (372 $\pi$ + 124)
**Answer:** (372 $\pi$ + 124)cm

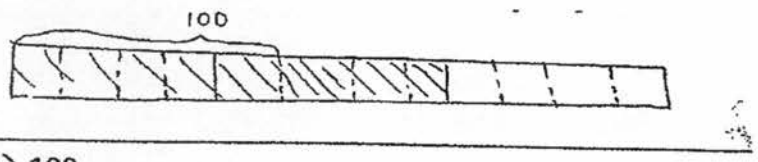
Question 4:
∠ABD= ∠ADB
=180°-75°- 40°= 65°
∠BAD= 180°- 65°- 65°= 50°
∠Y = 75°- 50°= 25°
Answer: 25°



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Question 5:




5u → 100
1u → 20
3x 4= 12
12u → 240
Answer: 240

Question 6:
a) 2w- 7+ W+ W+ 3+ 35- W
= 2W + W+ W- W- 7+ 3+ 35
= (3w+31)
Answer a: (3w+31)cm

b) 3x 4 +31= 43
2m= 200cm
200- 43= 157
Answer b: 157cm

Question 7:
12 ÷ 3x 7= 28
28x 23 x $\frac{1}{2}$ = 322
100%- 60%= 40%
322x 40%= 128.8
Answer: 128.8$m^2$

Question 8:
120x 80x 15= 144000
30L = 30 000$cm^2$
144 000- 30 000= 114 000
114 000 ÷ 3x 5= 190 000
190 000$cm^2$= 190L
Answer: 190L



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Question 9:

650g= 0.65kg

1080g= 1.08kg

23.5x 0.6= 14.1

68x 0.65= 44.2

17.25x 1.08= 18.63

100- 14.1- 44.2- 18.63= 23.07 round up to 23.10

Answer: $23.10

Question 10:

11.30am J—→B

J ←—B 11.30am

Total 10km 2 way of J to B

AT←--------35km---------→ BT




Total distance -→ 35km + 10km= 45km

1h= 16km

15min= $\frac{1}{4}$h → $\frac{1}{4}$h x 16km= 4 km

45km + 4km= 49km

49km ÷ 2 = 24.5km

Speed → 24.5km ÷ $\frac{1}{4}$h = 98km/h

Answer: 98km/h



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Question 11:

S: B: T

1: 3: 2

12: 36 : 24

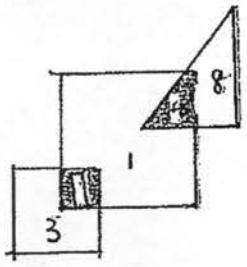
$\frac{1}{4}$ x 12= 3

$\frac{1}{3}$ x 24= 28

3+ 8= 11

Fraction of BS → $\frac{11}{36}$

Answer: $\frac{11}{36}$ *of it is shaded*




Question 12:

A: D

8: 11 ⎫

9 : 14 ⎭ -70

80u- 9p= 11u- 14p

14p- 9p= 11u- 8u

5p = 3u

P= 0.6u

9p= 5.4u

8u-5u.4u= 2.6u

2.6u ÷ 8 x 100= 32.5

Answer: 32.5%

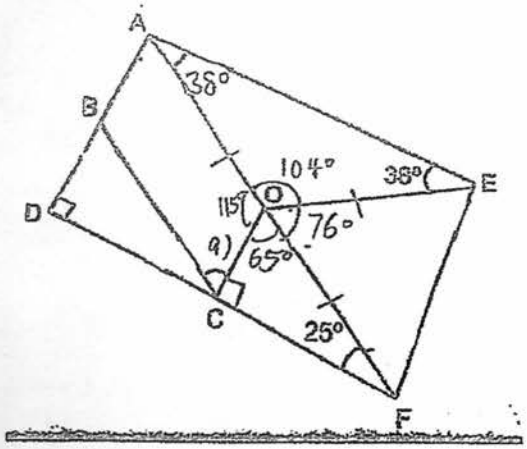


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Question 13:




a) ∠COF= ∠OCB
= 180°- 25°- 90°= 65°
Answer: ∠OCB is 65°

b) ∠AOC= 180°- 65°= 115°
∠AOE= 180°- 38°- 38°= 104°
∠EOF= 360°- 104°- 115°- 65°= 76°
∠OFE= ∠EOF
= 180°- 76° ÷2 = 52°
∠CFE= 52°+ 25°= 77°
Answer: 77°



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Question 14:

$256 \times \frac{1}{4} = 64$

Rx r= 128

BQ → $\frac{1}{4} \times 3.14 \times 128 = 100.48$

SQ → $\frac{1}{4} \times 3.14 \times 8 \times 8 = 50.24$

$100.48 - 50.24 = 50.24 cm^2$

Answer: $50.24 cm^2$

Question 15:

15a) Answer: February & March

b) $20 \div 5 = 4$

$4 \times 4 = 16$

$16 \times 1\frac{1}{2} = 24$

The sale of cars was $1\frac{1}{2}$ times that of March in April.

15b) Answer: April

c)$(12 + 32 + 16 + 24 + 12 + 36) \div 6 = 22$

15c) Answer: 22

Question 16:

16a) 5-1= 4

4x 4+ 5= 21

Answer: a) 21

16b) 253- 5= 248

248 ÷ 4= 62

62+ 1= 63

Answer: b) 63

16c) 43- 1= 42

42x 4 +5= 173

173- 151= 22

Answer: c) 22



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Question 17

a) 160x 85%= 136

136x 125%= 170

Answer: a) 170

b(i) 160x 90%= 144

After → 144+ 170= 314

Before → 160+ 136= 296

Answer: b(i) increase

b(ii) 314- 296= 18

$\frac{18}{296}$ x 100 ≈ 6

Answer: b(ii) 6%

Question 18

50x 30x 70= 10500

1.2L = 1200$cm^3$

1200x 10= 12000

10500- 12000= 93000

800x 30= 24000

93000+ 24000= 117000

1200x 30= 36000

17000- 36000= 81000

81000 ÷ 50 ÷ 30= 54

Answer: 54cm

**END**



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