**PRELIMINARY EXAMINATION 2017** **Booklet A**

**0008/1(A)**

# MATHEMATICS
## PAPER 1
## (BOOKLET A)

Additional materials: Optical Answer Sheet (OAS) **Total Time for Booklets A and B : 50 min**

## INSTRUCTIONS TO CANDIDATES

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

**Name** : _____

**Index No.:** _____ **Class :P6 /** _____ **Date:** 2 August 2017

**Parent's Signature:** _____

This booklet consists of 6 printed pages.

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

1 Which one of the following would most likely be the length of our school canteen table?

(1) 1.8 cm
(2) 18 cm
(3) 1.8 m
(4) 18 m

2 By rounding each of the numbers to the nearest whole number, estimate the value of:

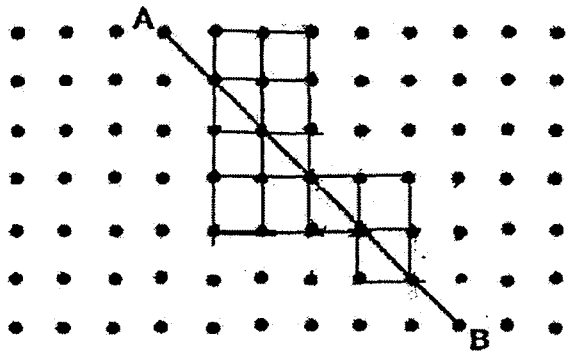
$$18.5 + 63.2 \times 9.54$$

(1) 595
(2) 648
(3) 649
(4) 820

3 There were 200 people in an auditorium.
60 of them were children and the rest were adults.
What percentage of the people were adults?

(1) 30%
(2) 40%
(3) 70%
(4) 140%

4 The figure below shows 11 identical squares.
How many squares must be added so that the line AB becomes a line of symmetry?



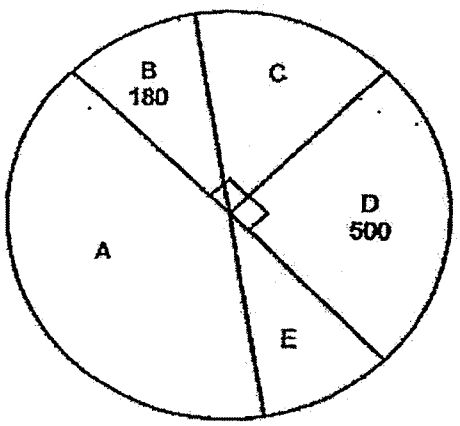

(1) 5

(2) 2

(3) 3

(4) 4

5 The pie chart below shows the brands of mobile phones A, B, C, D and E sold in a year.
How many Brand C mobile phones were sold?



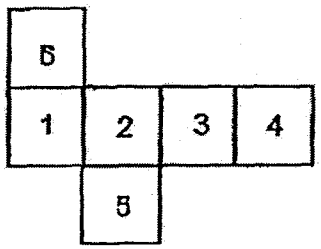

(1) 180

(2) 320

(3) 360

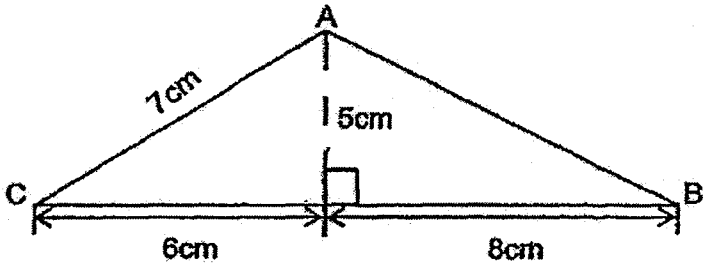
(4) 680

6 The figure below shows the net of a cube.
The faces are numbered 1 to 6.
Which number is opposite 3 when the net is folded to make a cube?




(1) 1
(2) 2
(3) 6
(4) 4

7 Find the area of triangle ABC.

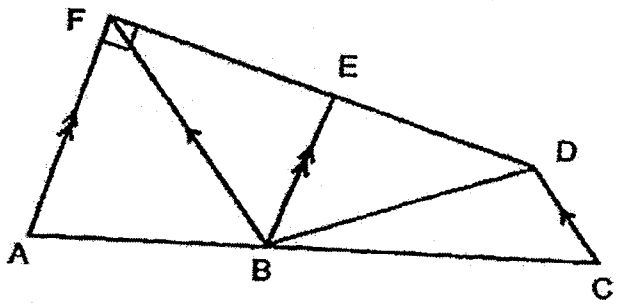



(1) 20 cm²
(2) 28 cm²
(3) 35 cm²
(4) 49 cm²

8 Lydia cycles at an average speed of 16 km/h.
How long does she take to cycle 20 km?

(1) 48 min
(2) 1 h 4 min
(3) 1 h 15 min
(4) 1 h 20 min

9 In the figure below, AC and DF are straight lines.




Which of the following is a trapezium?

(1) BCDE

(2) BCDF

(3) ABDF

(4) ACDF

10 Min Ho bought $k$ pens at a bookshop.
He bought 6 more rulers than pens.
How many pens and rulers did he buy in total?

(1) $k-6$

(2) $k+6$

(3) $2k-6$

(4) $2k+6$

11 Acer, Beth and Candy sold a number of funfair tickets.

Acer sold $\frac{2}{5}$ of the tickets.

Beth sold 4 more tickets than Acer.

Candy sold 15 tickets.

How many tickets did Beth sell?

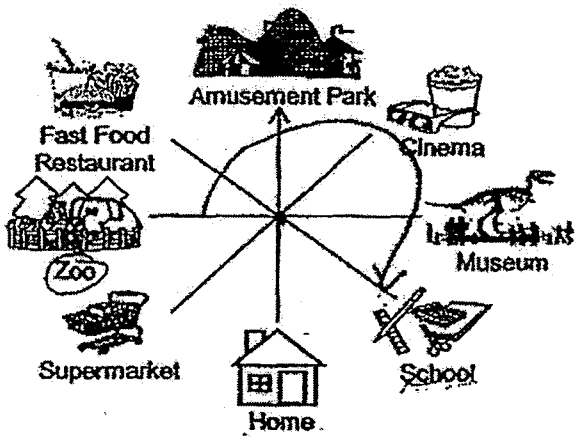
(1) 18

(2) 22

(3) 38

(4) 42

12 Anson will face the zoo if he makes a 225° anti-clockwise turn.
Where will Anson face if he makes a 270° clockwise turn, from his starting position?




(1) Home
(2) Cinema
(3) Supermarket
(4) Amusement Park

13 Figure 1 and Figure 2 below are not drawn to scale.
Figure 1 is a rectangle with a perimeter of 28 cm.
Figure 2 is made up of 4 such rectangles.
The perimeter of Figure 2 is 64 cm.
Find the length of the side AB in Figure 2.

Figure 1

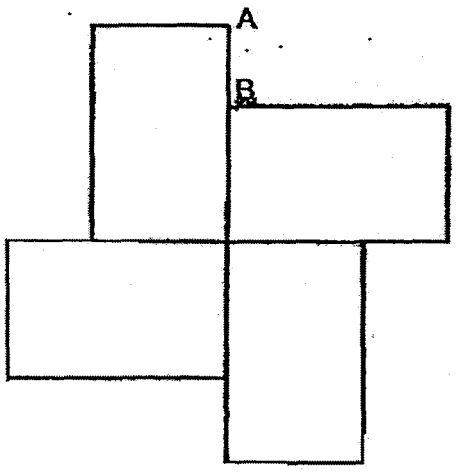



Figure 2

(1) 6 cm
(2) 2 cm
(3) 9 cm
(4) 12 cm

14 A student has to complete a total of four quizzes in Round 1 of a Math competition. The scores for Kate's first three quizzes are shown below.

| Round 1 | |
|---|---|
| Quiz | Score |
| 1st | 18 |
| 2nd | 13 |
| 3rd | 20 |
| 4th | ? |

Kate will qualify for Round 2 if her average score for three of the four quizzes is 20 or more.
What is the lowest score Kate must get in the 4th quiz to qualify for Round 2?

(1) 17

(2) 22

(3) 27

(4) 29

15 A repeated pattern is formed using the numbers 0, 1 and 2.
The first 16 numbers are shown below.

| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | 11th | 12th | 13th | 14th | 15th | 16th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2 | 2 | 1 | 2 | 0 | 2 | 2 | 1 | 2 | 0 | 2 | 2 | 1 | 2 | 0 |

What is the sum of the first 59 numbers?

(1) 56

(2) 63

(3) 77

(4) 82

PRELIMINARY EXAMINATION 2017 **Booklet B**

0008/1(B)

# MATHEMATICS

## PAPER 1

## (BOOKLET B)

Additional materials: Optical Answer Sheet (OAS) **Total Time for Booklets A and B : 50 min**

## INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all the questions.
4. Write your answers in this booklet.
5. You are not allowed to use a calculator.

**Name** : _____

**Index No.:** _____ **Class :P6 /** _____ **Date:** 2 August 2017

**Parent's Signature:** _____

This booklet consists of 7 printed pages.

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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

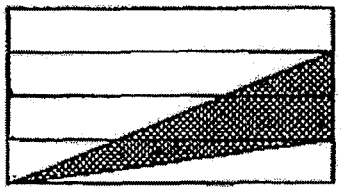
**16** What is the value of $40 - 2 \times (8 + 10) \div 2$?

Ans: _____

**17** Evaluate 56 tens + $\frac{15}{100}$ + 6 hundredths.

Ans: _____

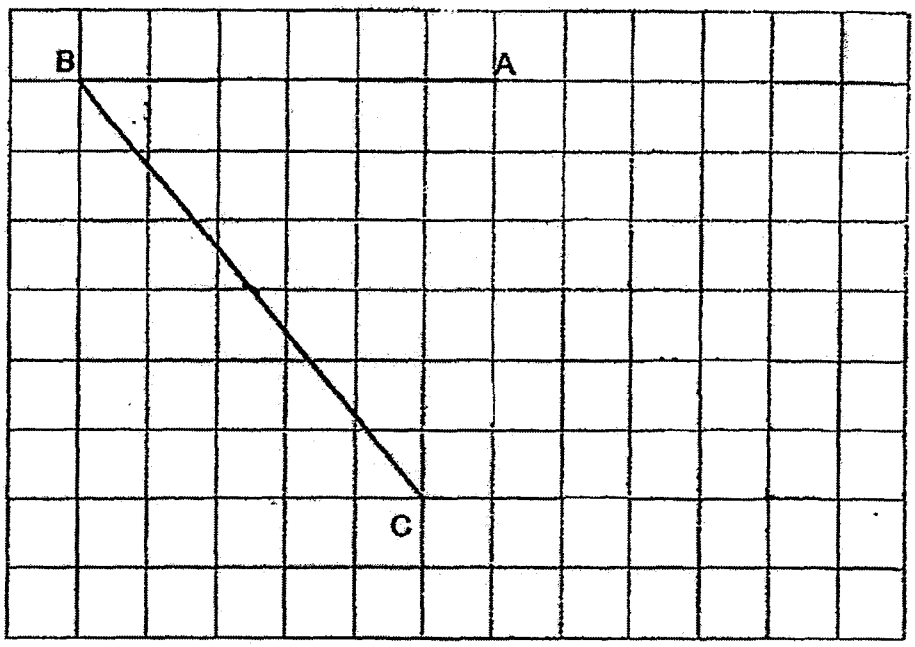
**18** The figure below is made up of 4 identical rectangles and 1 shaded triangle.
What fraction of the figure is shaded?



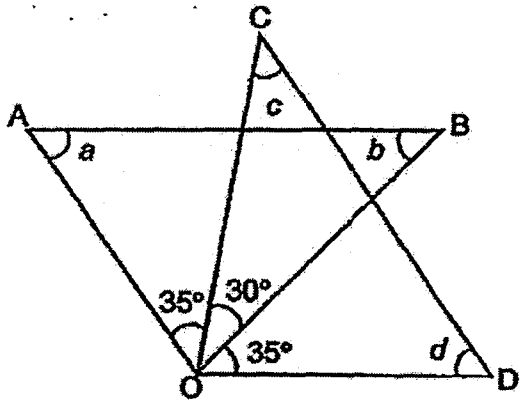
Ans: _____

Do not write in this space

19 In the grid below, lines AB and BC form two sides of a parallelogram. Complete the parallelogram by drawing the other two sides in the grid below.




20 The figure below is made up of triangles OAB and OCD.
Find $\angle a + \angle b + \angle c + \angle d$.




Ans: _____ °

21 Express 4.16 as a mixed number in the simplest form.

Do not write in this space

Ans: _____

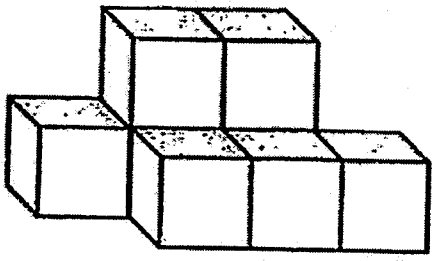
22 Express 0.7% as a fraction.

Ans: _____

23 John completed a race in 160 seconds.
He was 35 seconds slower than Peter.
How long did Peter take to complete the race?
Give your answer in terms of minutes and seconds.

Ans: _____ min _____ s

24 The solid below consists of 1-cm cubes.
Find the volume of the solid.



Ans: _____ $cm^3$

Do not write in this space

25 Find the value of $4g + 10 + g - 7$ when $g = 5$.

Ans: _____

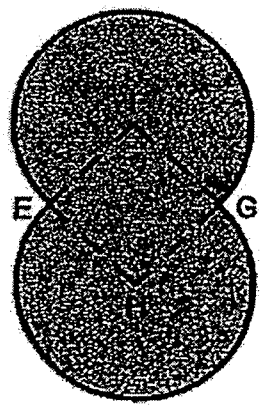
Questions 26 to 30 carry 2 marks each. Show your working clearly in the space your answers in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

Do not write in this space

26 A drink mixture is made using 400 mℓ of water and 50 mℓ of syrup. To make 1.35 litres of this mixture, how many litres of water will be needed?

Ans: _____ ℓ

27 The figure below is formed by 2 identical circles with centres F and H.
EFGH is a square and the length of FG is 7 cm.
Find the perimeter of the shaded figure. ( Take $\pi = \frac{22}{7}$ )



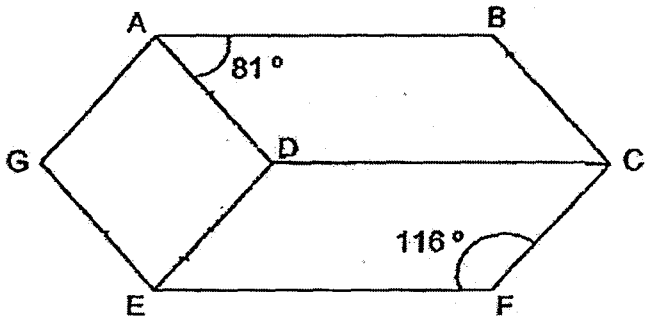

Ans: _____ cm

Do not write in this space

28 ABCD and CDEF are parallelograms.

ADEG is a rhombus.

Find ∠ADE.




Ans: _____ °

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29 Three groups of students sold notebooks and markers for charity.
They sold a notebook for $5 and a marker for $3.
The table shows the number of notebooks and markers sold by the three groups.

| Group | Number of items sold | |
|---|---|---|
| | Notebook | Marker |
| 1 | 8 | 5 |
| 2 | 9 | 6 |
| 3 | 7 | 8 |

(a) Which group collected the most amount of money?
(b) What was the amount collected by that group?

Ans: (a) Group _____

(b) $ _____

---

30 There are 3 types of roses in a box.
The ratio of the total number of red roses to the total number of pink roses is 1 : 2.
The ratio of the total number of white roses to the total number of red roses and pink roses is 7 : 5.
What fraction of all the roses in the box are pink roses?
Give your answer as a fraction in its simplest form.

Do not write in this space

Ans: _____

**END OF PAPER**

# PRELIMINARY EXAMINATION 2017

0008/2

## MATHEMATICS

## PAPER 2

Time: 1h 40 min

## INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all the questions.
4. Show your working clearly as marks are awarded for correct marking.
5. Write your answers in this booklet.
6. You are allowed to use a calculator.

| | |
|---|---|
| Name : _____ | |
| Index No.: _____ Class : P6/ _____ | Date: 2 August 2017 |
| PAPER 1: Booklet A | / 20 |
| PAPER 1: Booklet B | / 20 |
| PAPER 2 | / 60 |
| TOTAL | / 100 |
| Parent's Signature : _____ | |

This booklet consists of 14 printed pages.

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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)

Do not write in this space

1 Faith saves $6w.
Her sister saves $7 more than her.
How much do Faith and her sister save altogether?
Give your answer in terms of $w$.

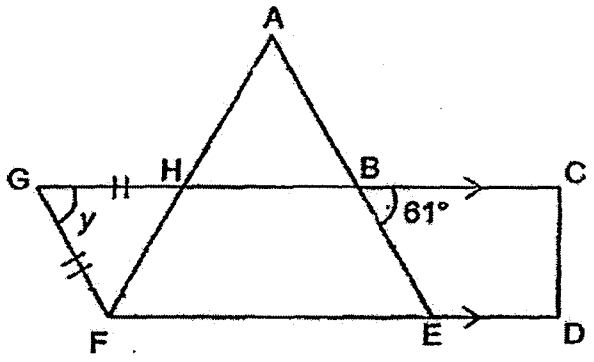
Ans: $ _____

2 The figure below is formed using 2 identical squares of side 15 cm and 2 equilateral triangles.
Find the perimeter of the figure.

Ans: _____ cm

Do not write in this space

3 In the figure below, AEF and FGH are isosceles triangles.
GC is parallel to FD.
Given that $\angle EBC = 61°$, find $\angle y$.



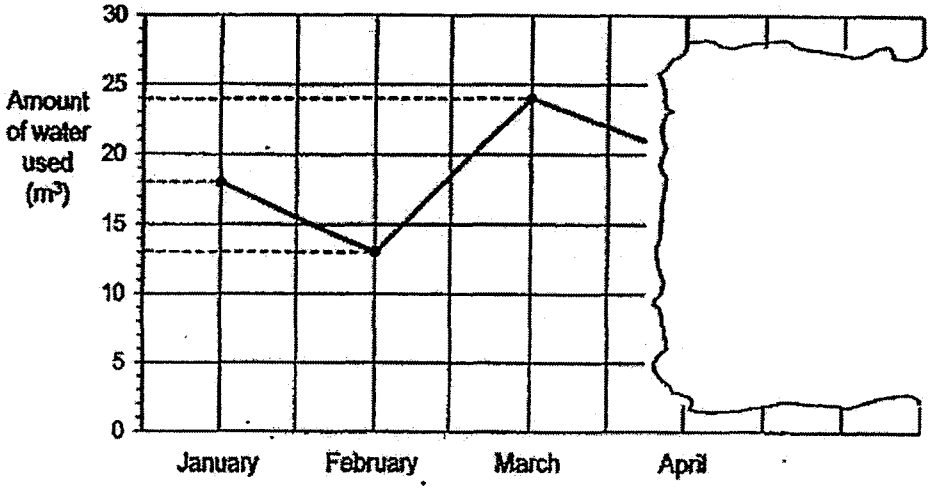

Ans: _____ °

4 The number of visitors to a zoo was 10 000 in September.
This was a 20% decrease from the in August.
How many visitors were there in August?

Ans: _____

5 The graph below shows the amount of water used by Tom's family from January to April. Part of the graph was accidentally torn away.

Do not write in this space




The average amount of water used from January to April was 18.75 $m^3$. What was the family's water usage in April?

Ans: _____ $m^3$

For questions 6 to 18, 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. (50 marks)

Do not write in this space

6 Mr Max bought 6 identical red shirts and 6 identical blue shirts.

The total cost of the shirts was $372.

Each blue shirt cost $6.80 more than each red shirt.

What was the cost of one red shirt?

Ans: _____ [3]

7 Andy and Brady travelled from Town C to Town D along the same route.

Andy started his journey 18 minutes earlier than Brady.

Brady travelled 84 km at an average speed of 70 km/h for the whole journey.

Both Andy and Brady arrived at Town D at the same time.

Find Andy's average speed in km/h.

Ans: _____ [3]

Do not write in this space

8 David bought some 30-cent stamps and some 80-cent stamps for $28.90.
There were three times as many 30-cent stamps as 80-cent stamps.
How many 30-cent stamps were there?

Ans: _____ [3]

---

9 The original price of a washing machine was $900.
Mrs Lee bought the washing machine at a discount of 15%.

(a) What was the discounted price of the washing machine?

(b) If there was a GST of 7% on the discounted price of the washing machine, how much did Mrs Lee pay in total?

Ans: (a) _____ [1]

(b) _____ [2]

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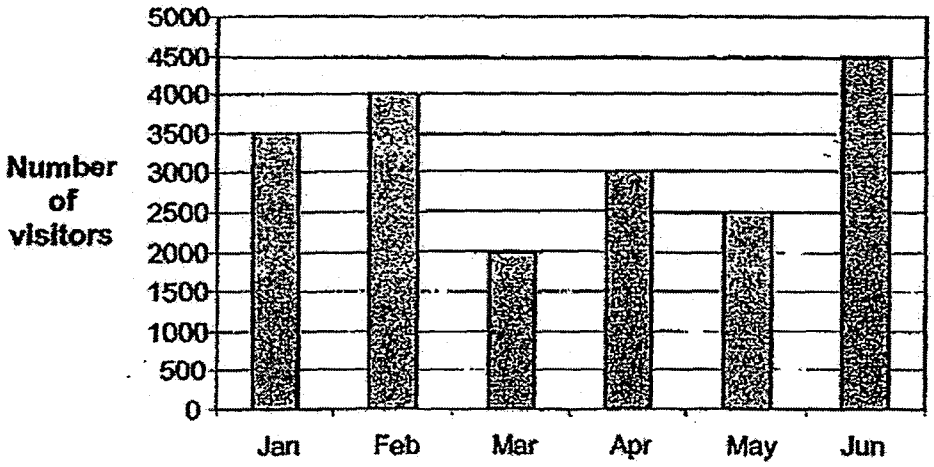
Do not write in this space

10 The bar graph below shows the number of visitors who visited a carnival for the first 6 months of the year.




In June, $\frac{2}{5}$ of the visitors were adults and the rest were children.

The number of girls in June was the same as the number of visitors in March.

(a) How many boys visited the carnival in June?

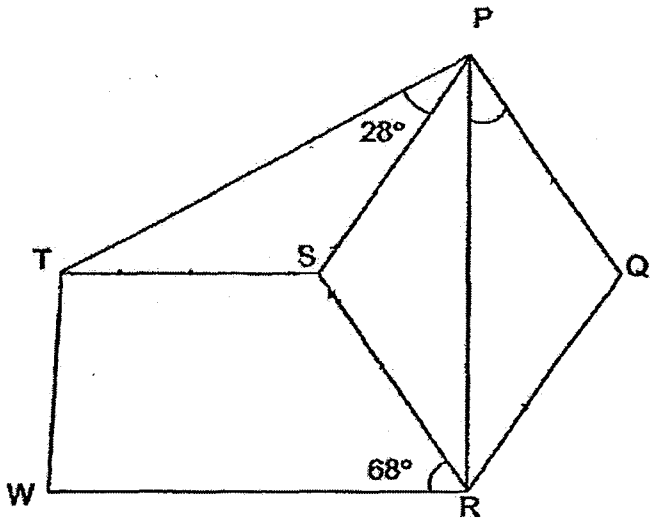
(b) What fraction of the visitors in June were boys?
Give your answer as a fraction in its simplest form.

Ans: (a) _____ [2]

(b) _____ [1]

11 In the figure below, PQRS is a rhombus and RSTW is a trapezium. Find ∠QPR.

Do not write in this space




Ans: _____ [4]

Do not write in this space

12 John's age is $\frac{2}{9}$ of his grandmother's age now.
His grandmother will be 99 years old in 18 years' time.

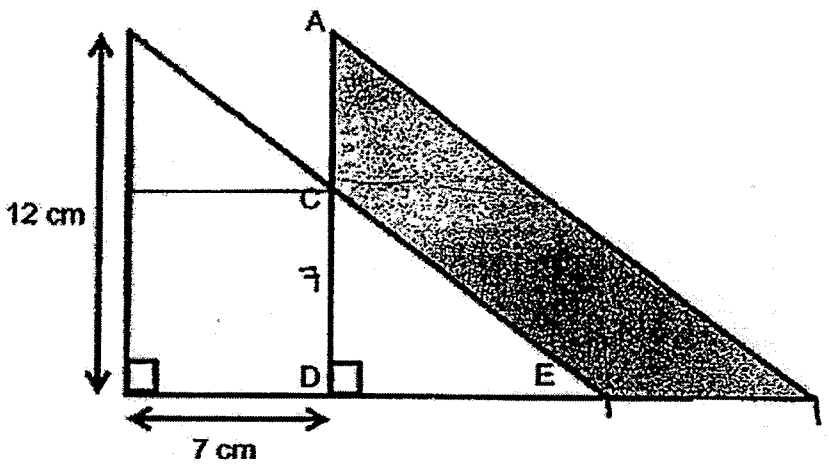
(a) How old is John's grandmother now?

(b) In how many years' time will John's age be $\frac{1}{4}$ that of his grandmother?

Ans: (a) _____ [1]

(b) _____ [3]

13 In the figure below, 2 identical right-angled triangles overlap.
AC is 5 cm and the area that overlaps is CDE.
Find the area of the shaded part.




Do not write in this space

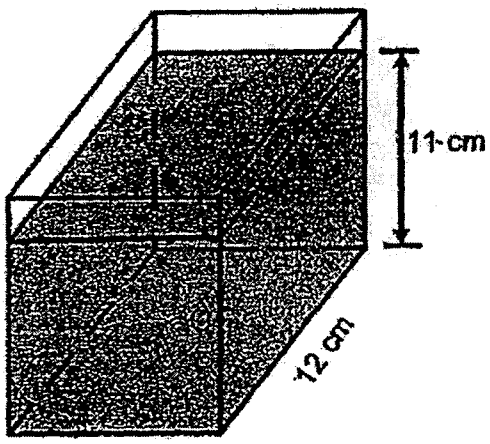
Ans: _____ [4]

Do not write in this space

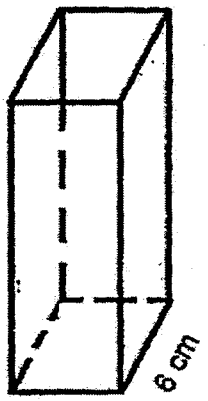
14 Tank A is filled with water to a height of 11 cm.
The water in Tank A is poured slowly into an empty rectangular tank until the water in both tanks reach the same height without spilling.

(a) What is the volume of water in Tank A at first?

(b) Find the height of the water level in each tank.



Tank A



Empty Tank

Ans: (a) _____ [1]

(b) _____ [3]

15 Nathan had some money.

He spent $\frac{1}{8}$ of it on a T-shirt and $\frac{3}{4}$ of the remainder on a pair of shoes.
After that, his parents gave him $715.
The ratio of the total amount of money he had left at the end to the amount of money he had at first was 9 : 4
How much did Nathan have at first?

Do not write in this space

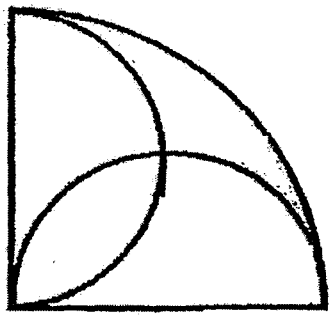
Ans: _____ [4]

16 The figure below is made up of 2 identical semicircles enclosed in a quarter circle.

The radius of the quarter circle is 42 cm.

Find the area of the shaded part.

(Take $\pi = 3.14$)



Do not write in this space

Ans: _____ [5]

17 A fruit stall owner had some pears, apples and oranges.
For every 2 pears, there were 3 apples.
For every 9 apples, there were 5 oranges.

(a) What was the ratio of the number of pears to the number of apples to the number of oranges the fruit stall owner had?
Give your answer in the simplest form.

(b) 40 pears were rotten and thrown away.
Then the ratio of the remaining pears to the total number of apples and oranges was 1 : 4.
How many fruits did the fruit stall owner have at first?

Do not write in this space

Ans: (a) [1]

(b) [4]

Do not write in this space

18 At a carnival, the number of children is three times the number of adults.
$\frac{2}{3}$ of the boys is equal to $\frac{5}{6}$ of the girls.
The number of cookies given to each adult, boy and girl is 9, 6 and 3 respectively.
The total number of cookies given to the boys is 1440 more than the total number of cookies given to the adults.

(a) Find the total number of cookies given out at the carnival.

(b) Find the number of girls at the carnival.

Ans: (a) _____ [4]

(b) _____ [1]

**END OF PAPER**

# ANSWER SHEET

EXAM PAPER 2017 (P6)

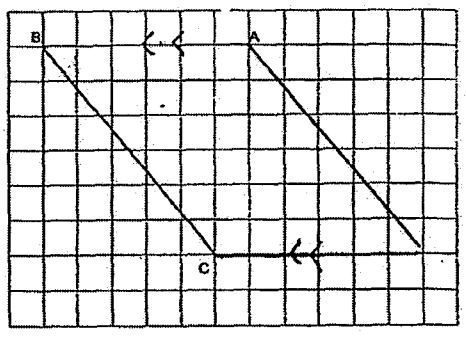
SCHOOL : ST. HILDA'S

SUBJECT : MATHEMATICS

TERM : PRELIM

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

16)22 17)560.21 18) ¼ 19)




20)230° 21)$4\frac{4}{25}$ 22)7/1000

23)2 min 5 s 24)8cm3 25)28

26)1.2L 27)66cm 28)145°

29)a)2 b)$63

30)5/18

## Paper 2

1)$6w + 7 = 6w + 7$

$6w + 6w + 7 = 12w + 7$

ANS: $(12w+7)

2)$15 \times 4 = 60$

$30 \times 2 = 60$

$60 + 60 = 120cm$

3)$180^\circ - 61^\circ = 119^\circ$

$\angle y = 180^\circ - 61^\circ - 61^\circ = 58^\circ$

4)80% →10000

20% →2500

100% →12500

5)$18.75 \times 4 = 75$

$75 - 18 - 13 - 24 = 20m3$

6)$6.8 + 6 = 40.8$

$372 - 40.8 = 331.2$

$331.2 \div 12 = \$27.60$

7)$84 \div 70 = 1.2$

$1.2 \times 60 = 72$

$72 + 18 = 90$

$84 \div 1.5 = 56km/h$

8)3 x 0.3 = 0.9

0.9 + 0.8 = 1.7

28.9 ÷ 1.7 = 17 (set)

17 x 3 – 51 stamps

9)a)85% x 900 = 765

b)107% x 765 = 818.55

10)a)2/5 x 4500 = 1800

b)4500 – 1800 – 2000 = 700 boys

700/4500 = 7/45

11) $\angle TSR = 180^\circ - 68^\circ = 112^\circ$

$180^\circ - 28^\circ - 28^\circ = 124^\circ$

$360^\circ - 124^\circ - 112^\circ = 124^\circ$

$180^\circ - 124^\circ - 56^\circ$

$\angle QPR = 56^\circ \; 2 = 28^\circ$

12)99 – 18 = 81

9u→81

1u→9

2u→18

81 – 18 = 63

3u→63

1u→21

21 – 18 = 3

a)81 years old

b)3 years

13)7 + 2 = 79

½ + 7 + 5 = 175

175 + 49 = 66.5cm2

14)10 x 12 x 11 = 1320

10 x 12 = 120

5 x 6 = 30

120 + 30 = 150

320 ÷ 150 = 8.8

a)1320cm3

b)8.8cm

15)1/8 x 352 = 44

352 – 44 = 308

308 x ¾ = 231

308 x ¼ = 77

77 + 715 = 792

792 ÷ 9 = 88

88 x 4 = $352

16) ½ x 21 x 21 = 220.5

¼ x 3.14 x 21 x 21 = 346.185

346.185 – 220.5 = 125.685

125.685 x 2 = 251.37

½ x 21 x 21 x 3.14 = 692.37

692.37 – 251.37 = 441

692.37 + 441 = 1133.37

¼ x 3.14 x 42 x 42 = 1384.74

1384.74 – 1133.37 = 215.37cm2

17)a)6 : 9 : 5

b)320 fruits

18)a)33120 cookies

b)1920 girls