PRELIMINARY EXAMINATION (2017)

PRIMARY SIX

MATHEMATICS

PAPER 1

(BOOKLET A)

Name : _____( )

Class : Primary 6 _____

Total Time for Booklets A and B: 50 min

15 questions

20 marks

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.

Booklet A and B consist of 13 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. All diagrams are not drawn to scale. (20 marks)

---

1. Round 16 641 to the nearest hundred.

   (1) 16 000

   (2) 16 600

   (3) 16 700

   (4) 17 000

---

2. Which one of the following is the same as 3090 g?

   (1) 3 kg 9 g

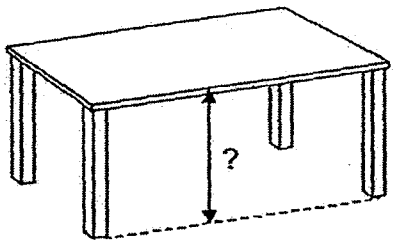
   (2) 3 kg 90 g

   (3) 30 kg 9 g

   (4) 30 kg 90 g

---

3. Which one of the following is likely to be the height of a dining table top from the ground?



   (1) 8.5 cm

   (2) 8.5 m

   (3) 85 cm

   (4) 85 m

(Go on to the next page)

4. What is the value of 2 ones, 8 tenths and 14 hundredths?

(1) 2.804

(2) 2.814

(3) 2.84

(4) 2.94

---

5. Which one of the following has the same value as $7 \div \frac{3}{5}$?

(1) $\frac{7}{1} \times \frac{5}{3}$

(2) $\frac{7}{1} \times \frac{3}{5}$

(3) $\frac{1}{7} \times \frac{3}{5}$

(4) $\frac{1}{7} \times \frac{5}{3}$

---

6. Express 0.7% as a fraction.

(1) $\frac{1}{7}$

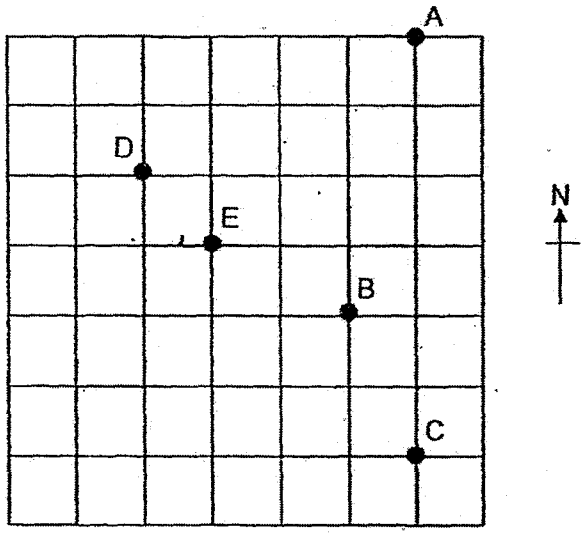
(2) $\frac{7}{10}$

(3) $\frac{7}{100}$

(4) $\frac{7}{1000}$

(Go on to the next page)

7. Five landmarks A, B, C, D and E on a map are shown in the square grid below.



Dennis is at landmark E.
He faces west and turns 135° anti-clockwise.
Which one of the following landmark is he now facing?

(1) A

(2) B

(3) C

(4) D

---

8. Wendy paid $280 for 3 similar shirts and 2 similar belts. The price of each belt is half the price of each shirt. What is the price of each belt?

(1) $35

(2) $40

(3) $56

(4) $70

(Go on to the next page)

9. Jane used a packet of flour to bake some muffins and cupcakes. After using $\frac{2}{5}$ of the packet of flour for muffins and 210 g of flour for cupcakes, she had 150 g of flour left. What was the mass of flour used for the muffins?

(1) 70 g

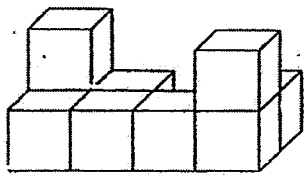
(2) 120 g

(3) 240 g

(4) 600 g

---

10. The solid shown is formed using some unit cubes.
How many unit cubes are used to form the solid?



(1) 8

(2) 9

(3) 10

(4) 11

---

11. The price of a Pego figure set was $20. Sally bought one such figure set and had to pay 7% GST on the price. How much did she pay for the Pego figure set?

(1) $1.40

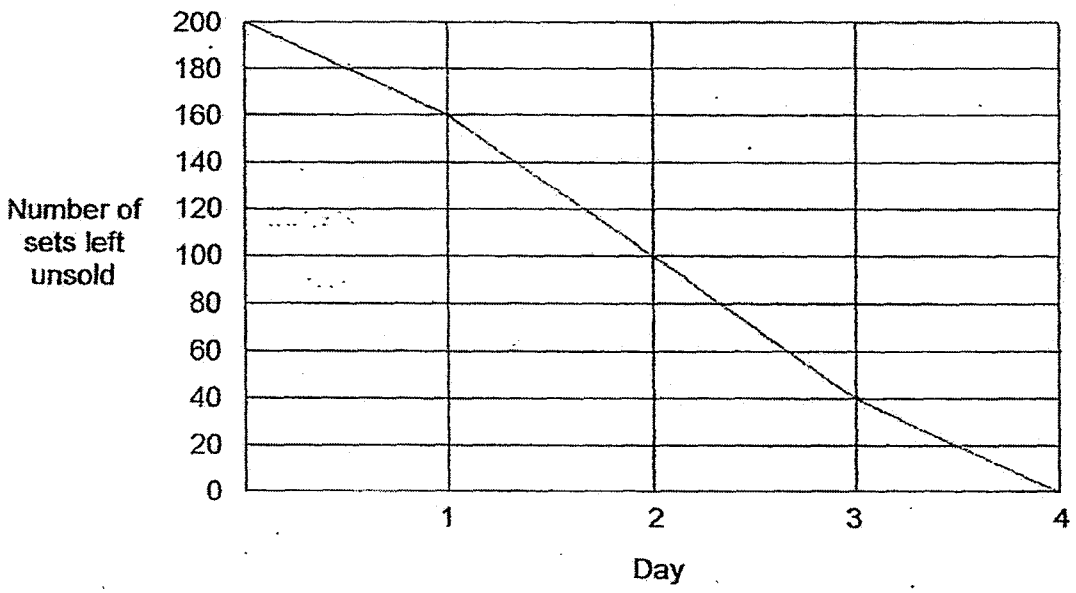
(2) $9.80

(3) $21.40

(4) $27

(Go on to the next page)

12. A toy store sold 200 sets of brick games during a 4-day sale. The line graph shows the number of sets left unsold at the end of each day.



What percentage of the brick games were sold at the end of Day 3?

(1) 20%

(2) 40%

(3) 60%

(4) 80%

---

13. John had thrice as many local stamps as foreign stamps. After giving away 59 local stamps and 11 foreign stamps, John had equal number of local and foreign stamps left. How many foreign stamps were there at first?

(1) 24

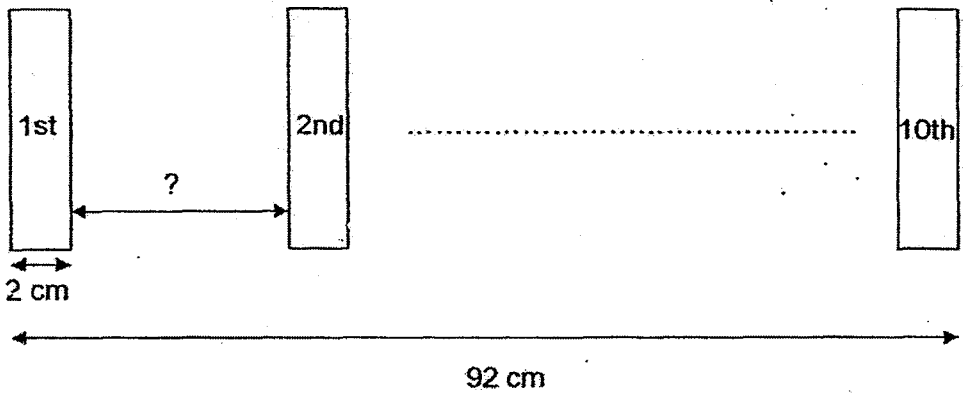
(2) 35

(3) 72

(4) 105

(Go on to the next page)

14. 10 identical rectangular cards are placed in a straight line at equal distance from one card to the next card.



How far apart is one rectangular card from the next one?

(1) 7.2 cm

(2) 8 cm

(3) 9 cm

(4) 9.2 cm

---

15. A box contained equal number of red and blue marbles. The blue marbles are repacked into 2 smaller bags in the ratio 5 : 7. The difference in the number of marbles between the two bags is 30 marbles. How many marbles were there in the box at first?

(1) 90

(2) 105

(3) 180

(4) 360

END OF BOOKLET A

PRELIMINARY EXAMINATION (2017)

PRIMARY SIX

MATHEMATICS

PAPER 1

(BOOKLET B)

Name : _____ ( )

Class : Primary 6 _____

Total Time for Booklets A and B: 50 min

15 questions

20 marks

Booklet A	
Booklet B	
Total	

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.

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

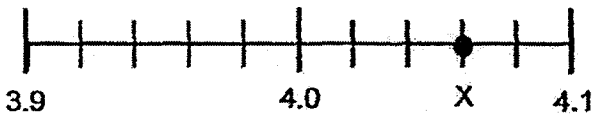
16. Write one million, ten thousand and ninety in numerals.

Ans: _____

17. Find the value of $56 - (20 \div 5) \times 3 + 1$

Ans: _____

18. The number line below is marked at equal intervals.
What is the value of X?



Ans: _____

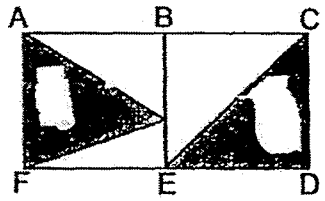
(Go on to the next page)

19. Write down all the common factors of 30 and 36.

Do not write in this space

Ans: _____

20. Figure ABCDEF is made up of 2 identical squares ABEF and BCDE.
What fraction of the figure is shaded?
Give your answer in the simplest form.



Ans: _____

21. Find the value of $\frac{8m}{3} - m$ when $m = 6$.

Ans: _____

(Go on to the next page)

22. The table shows the car park charges at a car park.

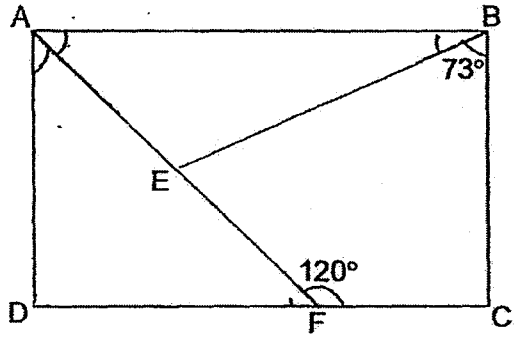
First hour	\$2.50
Every subsequent $\frac{1}{2}$ hour or part thereof	\$1.50

Mrs Lee parked in the car park from 8.45 a.m. to 11.00 a.m. on the same day. How much did she pay for the car park charges?

Do not write in this space

Ans:\$ _____

23. In the figure, ABCD is a rectangle. AEF is a straight line. Find ∠BEF.

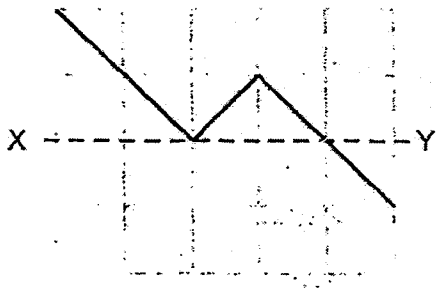


Ans: _____

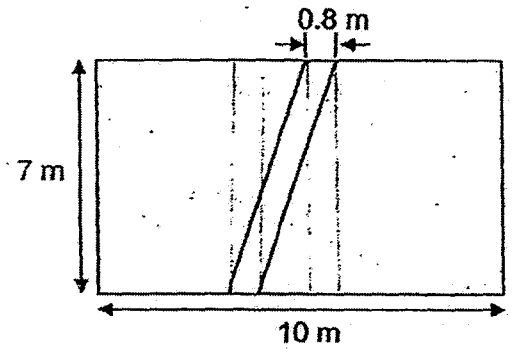
(Go on to the next page)

24. In the square grid below, three straight lines are drawn.
Draw three more straight lines to form a symmetric figure with XY as the line of symmetry.

Do not write in this space



25. The figure below shows a rectangular garden of length 10 m and breadth 7 m with a footpath of 0.8 m wide. What is the area of the garden excluding the footpath?



Ans: _____ m^2

marks for questions 16 to 25

(Go on to the next page)

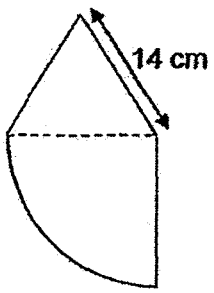
Questions **26** to **30** carry 2 marks each. Show your working and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

Do not write in this space

26. At a fruit stall, 3 mangoes cost as much as 2 papayas. Each papaya costs \$0.70 more than a mango. What is the cost of a papaya?

Ans: \$_____

27. The figure below is made up of a quarter circle and an equilateral triangle. Find the perimeter of the figure. Give your answer in terms of π.

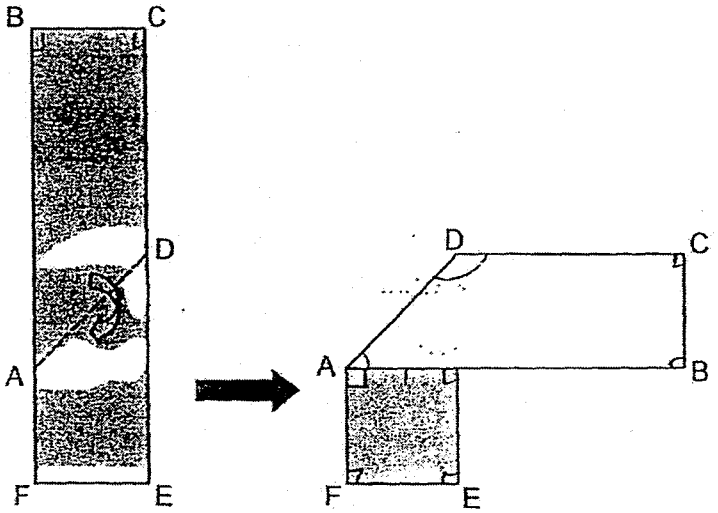


Ans: _____ cm

(Go on to the next page)

28. A rectangular piece of paper BCEF is folded along the dotted line AD as shown below. Find ∠ADC.

Do not write in this space



Before folding

After folding

Ans: _____ °

29. Some chicken nuggets were shared among a group of children. When each child tried taking 5 chicken nuggets, there were 12 chicken nuggets left over. When each child tried to take 8 chicken nuggets, they found that they needed 6 more nuggets. How many children were there in the group?

Ans: _____

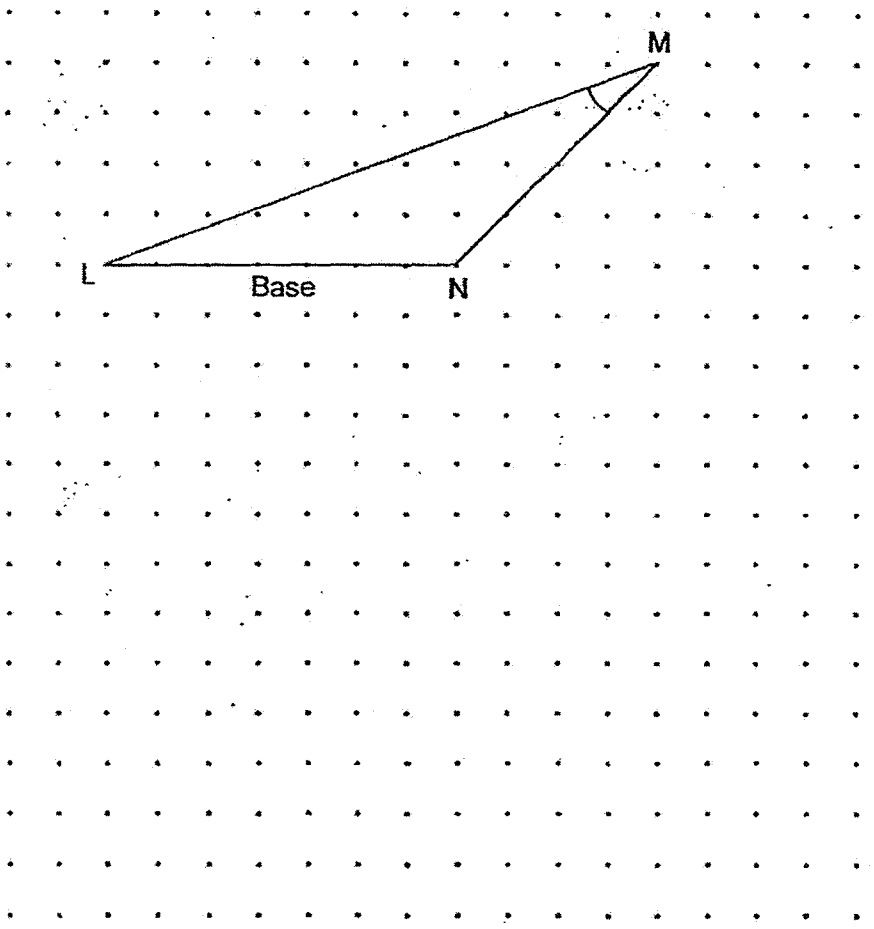
(Go on to the next page)

30. A triangle LMN is drawn by joining dots on the square grid below with three straight lines.

Do not write in this space

(a) Measure and write the size of ∠LMN.

(b) In the same way, draw a right-angled triangle with the same area as triangle LMN and the same base LN.



Ans: (a) _____ °

Total marks for questions 26 to 30

END OF BOOKLET B
END OF PAPER 1

PRELIMINARY EXAMINATION (2017)

PRIMARY SIX

MATHEMATICS

PAPER 2

Name : _____ ( )

Class : Primary 6 _____

Total Time: 1 h 40 min

18 questions

60 marks

Parent's Signature: _____

Paper 1 Booklet A	20
Paper 1 Booklet B	20
Paper 2	60
Total Marks	100

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.

This booklet consists of 16 printed pages.

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. All diagrams are not drawn to scale. (10 marks)

Do not write in this space

1. A fish burger costs \$1 less than a chicken burger. The total cost of 4 fish burgers is \$x.

   (a) Express the cost of 20 fish burgers in terms of x.

   (b) Express the cost of a chicken burger in terms of x.

Ans: (a) \$_____

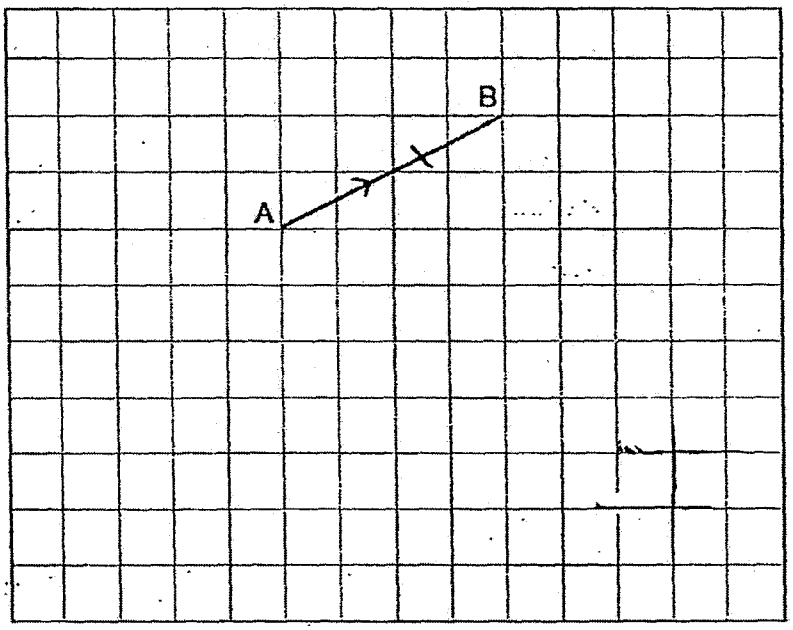
(b) \$_____

2. The average of 4 numbers is 27. When one of the numbers is removed, the sum of the remaining numbers is 72. What is the number that has been removed?

Ans: _____

Do not write in this space

3. In the square grid below, AB is one side of a trapezium ABCD.
   (a) Draw and label BC that is equal in length as AB and perpendicular to AB.
   (b) Draw and label CD that is parallel to AB and twice the length of AB.

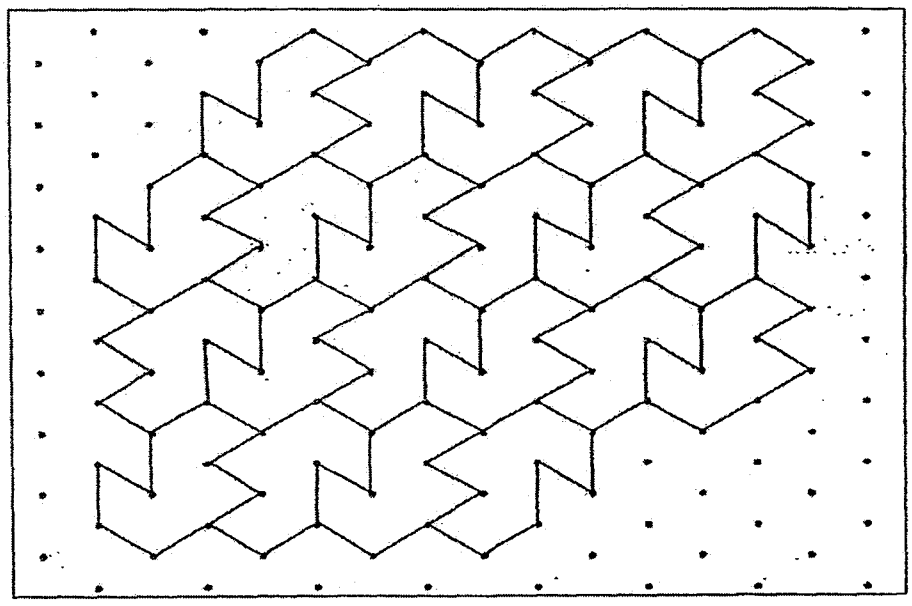


4. Maverick and Nathan completed a run with a total time of 23 minutes. Maverick was 5 minutes faster than Nathan. How long did Maverick take to complete the run?

Ans: _____ min

5. The pattern in the box shows part of a tessellation.
Extend the tessellation by drawing two more unit shapes in the space provided in the box.

Do not write in this space



For questions **6** to **18**, show your working 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. All diagrams are not drawn to scale. **(50 marks)**

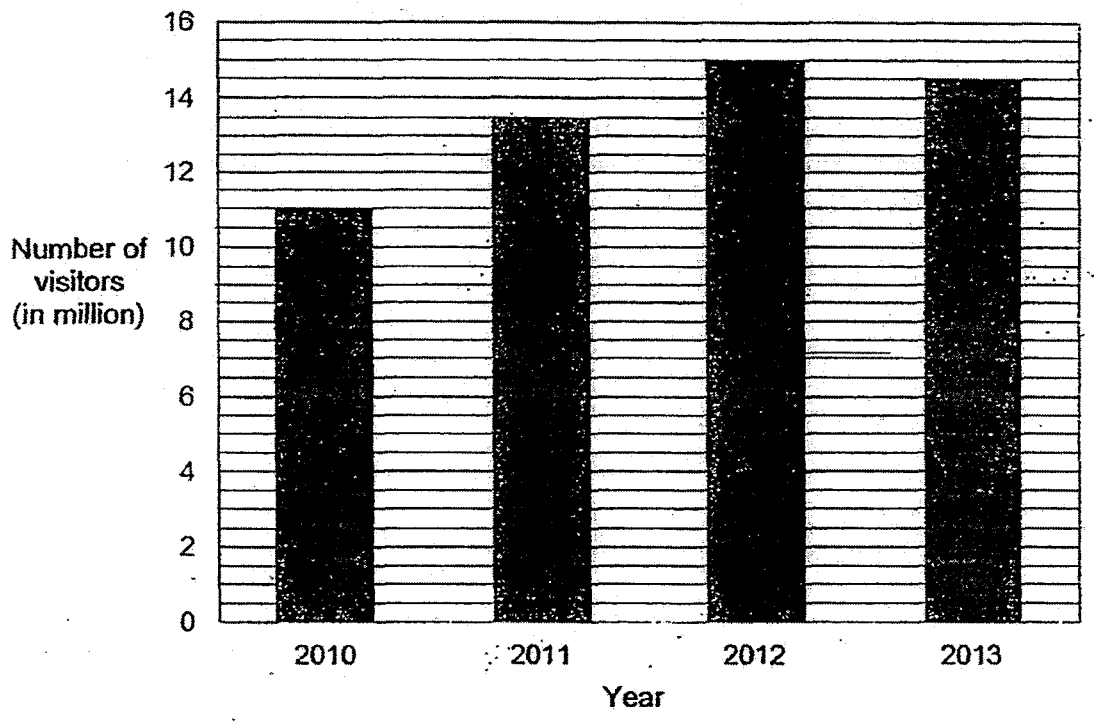
Do not write in this space

6. The mass of a container with 50 identical cups is 1500 g. When 30 of the cups are removed, the mass of the container with the remaining cups is 660 g. What is the mass of each cup?

Ans: _____ [3]

7. The graph below shows the number of visitors who arrived in Singapore from 2010 to 2013.

Do not write in this space



(a) What was the ratio of the number of visitors in 2011 to the number of visitors in 2012 to the number of visitors in 2013?

(b) What was the percentage increase in the number of visitors who visited Singapore in 2013 compared to 2010? Give your answer correct to 2 decimal places.

Ans: (a) _____ [1]

(b) _____ [2]

8. Jack and Alison have a total of \$352 at first. After Jack spent $\frac{2}{3}$ of his money and Alison spent $\frac{3}{5}$ of her money, they had equal amount of money left. How much money did Jack spend?

Do not write in this space

Ans: _____ [3]

9. The ratio of the volume of liquid in container A to the volume of liquid in container B was 5 : 2. When 112 ml of liquid from container A was poured into container B, the ratio of the volume of liquid in container A to the volume of liquid in container B became 1 : 2. What was the volume of liquid in container B in the end?

Do not write in this space

Ans _____ [3]

10. 398 candies were given to some children at a festival. Each boy was given 5 candies and each girl was given 3 candies. There were 18 more girls than boys at the festival. How many children were there at the festival?

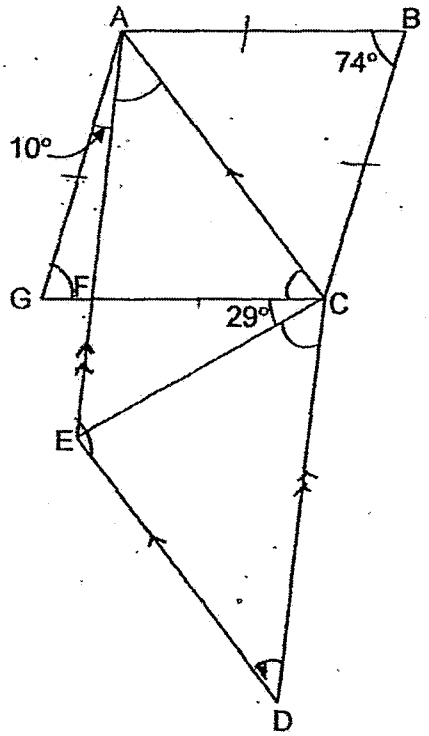
Do not write in this space

Ans: _____ [3]

11. In the figure, ABCG is a rhombus and ACDE is a parallelogram. $\angle ABC = 74°$, $\angle FCE = 29°$ and $\angle GAF = 10°$.

(a) Find $\angle FAC$.

(b) Find $\angle ECD$.



Do not write in this space

Ans: (a) _____ [2]

(b) _____ [2].

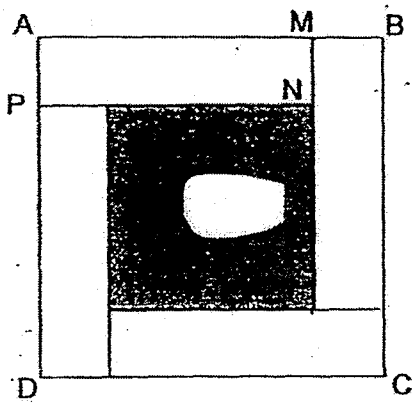
12. Anne ~~Anna~~ has 150 more stamps than Betty. After Anne sold $\frac{1}{3}$ of her stamps and Betty sold $\frac{5}{8}$ of her stamps, Anne has 191 more stamps than Betty. How many stamps do both girls have in total at first?

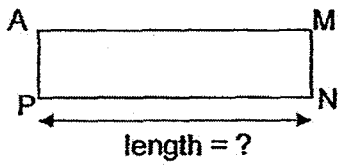
Do not write in this space

Ans: _____ [4]

13. Derek uses four identical rectangles to form the figure ABCD with a shaded square in the middle as shown below. Rectangle AMNP is one such rectangle. The perimeter of rectangle AMNP is 30 cm. The area of the shaded square is 81 cm^2.

Do not write in this space





(a) Find the length of PN.

(b) What is the area of figure ABCD?

Ans: (a) _____ [2]

(b) _____ [2]

14. After a discount of 25%, the price of a theme park ticket is $65.25. Senior citizens are given a further discount of $7.

(a) What is the total amount of discount given to senior citizens for the ticket?

(b) What is the percentage discount given to senior citizens for the ticket? Give your answer to the nearest whole number.

Do not write in this space

Ans (a): _____ [2]

(b): _____ [2]

15. At the start of a birthday party, $\frac{5}{7}$ of the children were boys and the rest were girls. During the party, some boys left and the remaining number of boys were $\frac{2}{5}$ of the children. 32 boys then joined the party. The number of children was 10 more than the number of children at the start of the party. How many children were there at the start of the party?

Do not write in this space

Ans: _____ [4]

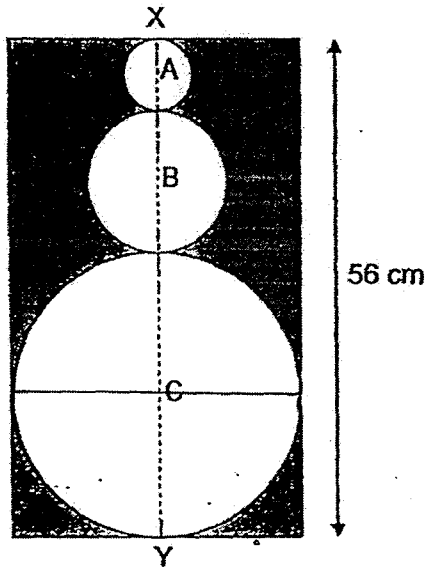
16. The figure below is formed by a rectangle and three circles A, B and C. The diameter of circle A is half that of circle B and the diameter of circle B is half that of circle C. Line XY is the line of symmetry of the figure.

Do not write in this space

(a) What is the diameter of circle A?

(b) Find the shaded area.

Take $\pi = 3.14$



Ans: (a) _____ [2]

(b) _____ [3]

17. Candies were only sold in packets of 12. Each packet was sold at $5. Mrs Lim had $128 and bought as many packets of candies as possible. She re-packed them into 42 boxes. Some boxes contained 6 candies while the rest contained 8 candies.

(a) How many candies did she buy?

(b) How many boxes contained 6 candies?

Do not write in this space

Ans: (a) _____ [2]

(b) _____ [3]

18. Three boys Alan, Ben and Carl had the same number of coins. Alan and Ben each had a mix of twenty-cent and fifty-cent coins. Alan had 7 twenty-cent coins while Ben had 17 twenty-cent coins. Carl had only fifty-cent coins.

(a) Of the three boys, who had the most money and who had the least?

(b) What was the difference in the total value of Alan and Ben's coins?

(c) Ben used all his fifty-cent coins to buy stationery. He then had $9.10 less than Carl. How many fifty-cent coins did Carl have?

Ans: (a) Most _____

Least _____ [1]

(b) _____ [2]

(c) _____ [2]

END OF PAPER.
PLEASE CHECK YOUR WORK CAREFULLY.

EXAM PAPER 2017
LEVEL : PRIMARY 6
SCHOOL : CATHOLIC HIGH SCHOOL
SUBJECT : MATHEMATICS

Paper 1

Section A

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

Section B

Q16 1010090

Q17 45

Q18 4.06

Q19 1,2,3,6

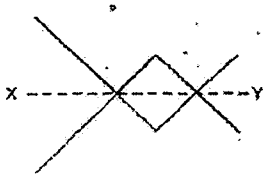
Q20 $\frac{1}{2}$

Q21 10

Q22 $7

Q23 77°

Q24



Q25 64.4m²

Q26 $2.10

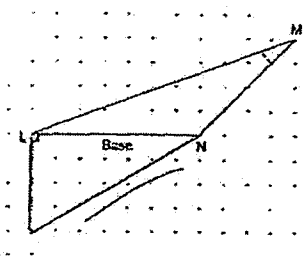
Q27 (7π + 42)cm

Q28 135°

Q29 6

Q30 (a) 25°

(b)



Paper 2

Q1 (a) 4 fish burgers = \$x

1 fish burger = $\frac{\$x}{4}$

20 fish burgers = $\frac{\$x}{4} \times 20$

= **\$5x**

(b) 1 chicken burger = 1 fish burger + \$1

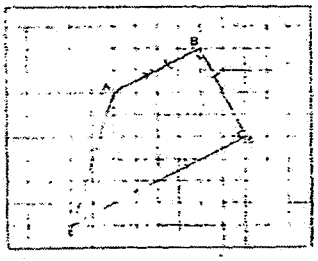
= $\frac{\$x}{4}$ + \$1

= **\$ ($\frac{x}{4}$ + 1)**

Q2 27 x 4 = 108

108 – 72 = **36**

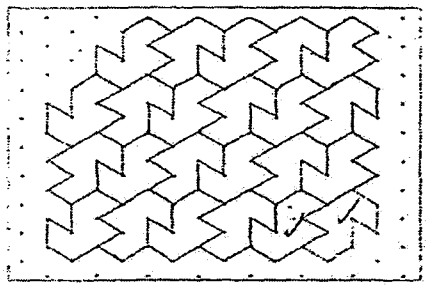
Q3



Q4 23 – 5 = 18

18 ÷ 2 = **9**

Q5



Q6 Mass of 50 cups + container = 1500g

Mass of 20 cups + container = 660g

Mass of 30 cups = 840g

Mass of 1 cup = 840g ÷ 30

= **28g**

Q7 (a)

2011	:	2012	:	2013	
13.5	:	15	:	14.5	X2
27	:	**30**	:	**29**	

(b) 14.5 – 11 = 3.5

3.5 ÷ 11 = 0.3182

0.3182 x 100% = **31.82%**

Q8

	spent	Left
Jack	$\frac{2}{3}$m	$\frac{1}{3}$m
Alison	$\frac{3}{5}$m	$\frac{2}{5}$m

$\frac{1}{3}$ of Jack = $\frac{2}{5}$ of Alison

Equal Fraction

$\frac{2}{6}$ of Jack = $\frac{2}{5}$ of Alison

6 + 5 = 11
$352 ÷ 11 = $32
6 – 2 = 4
4 x $32 = **$128**

Q9

	A	:	B	Total
At first	$5u_{x3}$	:	$2u_{x3}$	$7u_{x3}$
At the end	$1u_{x7}$	:	$2u_{x7}$	$3u_{x7}$

Total remained unchanged

	A	:	B	Total
At first	15u	:	6u	21u
At the end	7u	:	14u	21u

15u – 7u = 8u
112*ml* ÷ 8 = 14*ml*
14 x 14*ml* = **196*ml***

Q10 3 x 8 = 54
398 – 54 = 344
5 + 3 = 8
344 ÷ 8 = 43
43 x 2 = 86
86 + 18 = **104**

Q11 (a) 180° – 74° = 106°
106° ÷ 2 = 58°
53° - 10° = **43°**

(b) 180° – 43° = 137°
53° + 29° = 82°
137° – 82° = **55°**

Q12 191 -150 = 41

$\frac{1}{3}A = \frac{5}{8}B - 41$

$A = 1\frac{7}{8}B - 123$

$A = B + 150$

$150 + 123 = 273$

$\frac{7}{8}B = 273$

$\frac{1}{8}B = 273 \div 7$

$= 39$

$B = 39 \times 8$

$= 312$

$A = 312 + 150$

$= 462$

$A + B = 462 + 312$

$= \mathbf{774}$

Q13 (a) $9 \times 9 = 81$

$9 + 9 = 18$

$30 - 18 = 12$

$12 \div 4 = 3$

$9 + 3 = \mathbf{12}$

(b) $12 \times 3 = 36$

$36 \times 4 = 144$

$144 + 81 = \mathbf{225}$

Q14 (a) $100 - 25 = 75$

$\$62.25 \div 3 = \$21.75$

$\$21.25 + \$7 = \mathbf{\$28.75}$

(b) $\$21.75 \times 4 = \$87$

$\$28.75 \div \$87 = 0.33$

$0.33 \times 100\% = \mathbf{33\%}$

Q15

Before

Boys	:	Girls	Total
$5u_{x3}$	:	$2u_{x3}$	
15u	:	6u	21u

After

Boys	:	Girls	Total
$2u_{x2}$	:	$3u_{x2}$	
4u	:	6u	10u

Girls remained unchanged

10u + 32 = 21u +10 (32 boys joined, 10 more children)

11u = 22

1u = 2

21u = **42**

Q16 (a) 1u + 2u + 4u = 7u
7u = 56
1u = 56 ÷ 7
= **8**

(b) Area of circle A = 3.14 x 4 x 4
= 50.24cm^2
Area of circle B = 3.14 x 8 x 8
= 200.96 cm^2
Area of circle C = 3.14 x 16 x 16
= 803.84 cm^2
Area of rectangle = 56 x 32
= 1792cm^2

Total area of circles = 1055.04cm^2
Area of shaded = 1792 – 1055.04
= **736.96 cm^2**

Q17 (a) $128 ÷ $5 = 25.6
25 x 12 = **300**

(b) Assume all are 8 candies boxes
42 x 8 = 336
336 – 300 = 36
8 – 6 = 2
36 ÷ 2 = **18**

Q18 (a)

	20¢	50¢
Alan	7	17
Ben	17	7
Carl	-	24

Alan = 0.2x7 + 0.5x17
= $9.90
Ben = 0.2x17 + 0.5x7
= $6.90 (Least)
Carl = 0.5x24
= $12 (Most)

(b) $9.90 - $6.90 = **$3**

(c) 0.20x17 = $3.40
$3.40 + $9.10 = $12.50
$12.50 ÷ 0.50 = **25**

2ND