NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2017
PRIMARY 6

MATHEMATICS

Paper 1

Section A: 15 Multiple Choice Questions (20 marks)

Section B: 15 Short Answer Questions (20 marks)

Total Time for Paper 1: 50 minutes

INSTRUCTION TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided for Questions 1-15.
6. You are not allowed to use calculator for Paper 1.

Marks Obtained

Paper 1	Booklet A		/ 40
	Booklet B		
Paper 2			/ 60
Total			/ 100

Name : _____ ( )

Class : 6_____

Date : 9 May 2017 Parent's Signature : _____

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Section A (20marks)
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.

1. There were 333 548 visitors to the Singapore Zoological Gardens last year. Express this number to the nearest thousand.

(1) 300 000

(2) 330 000

(3) 333 000

(4) 334 000

2. The mass of a can of soft drink which is completely filled with drink weighs approximately _____.

(1) 30 g

(2) 300 g

(3) 3 kg

(4) 30 kg

3. If A is $\frac{1}{4}$ of B, what is the ratio of B : A ?

(1) 1 : 4

(2) 3 : 4

(3) 4 : 1

(4) 4 : 3

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4. Find the value of $30 - 2 \times (2 + 8)$.

(1) 280

(2) 34

(3) 18

(4) 10

5. Which one of the following fractions is larger than $\frac{1}{4}$?

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

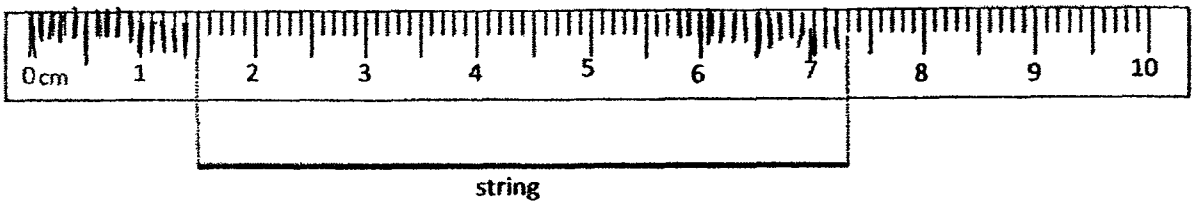
(2) $\frac{2}{9}$

(3) $\frac{3}{8}$

(4) $\frac{1}{5}$

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6. The figure below shows a string placed next to a ruler. What is the length of the string?



(1) 5.08 cm

(2) 5.8 cm

(3) 7.03 cm

(4) 7.3 cm

7. Express 0.2 as a percentage.

(1) 0.002 %

(2) 0.2 %

(3) 20 %

(4) 200 %

8. The ratio of the number of apples to the number of bananas to the number of pears in a basket is 2 : 3 : 4. There are 81 fruits in the basket, how many pears are there?

(1) 9

(2) 18

(3) 27

(4) 36

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9. How many 2-digit even numbers can you make from the following digits if each digit can only be used once for each number?

1	2	0	6

(1) 9

(2) 2

(3) 7

(4) 4

10. The table below shows the age of 4 children. Whose age is the nearest to their average age?

Name	Age in years
Ann	27
Bala	23
Candy	12
Duncan	18

(1) Ann

(2) Bala

(3) Candy

(4) Duncan

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11. The mass of a container is 2.8 kg when full. When it is $\frac{3}{4}$ full, it has a mass of 2.6 kg. Find the mass of the container when it is empty.

(1) 2.2 kg

(2) 2 kg

(3) 0.6 kg

(4) 0.2 kg

12. Debbie had some cherries. For every 10 cherries she ate, she gave 5 away. After she gave the last 5 cherries away, she had eaten 40 cherries altogether. How many cherries did Debbie have at the start?

(1) 45

(2) 55

(3) 60

(4) 75

13. 30% of the people at a fun fair are adults and the rest are children. 60% of the children are boys. If there are 150 adults at the fun fair, how many girls are there at the fun fair?

(1) 15

(2) 42

(3) 140

(4) 210

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14. Fatimah baked some vanilla, chocolate and lemon cookies. The ratio of the number of vanilla cookies to the number of chocolate cookies is 2 : 3. The ratio of the number of lemon cookies to the total number of cookies is 1 : 2. What is the ratio of the number of vanilla cookies to the number of chocolate cookies to the number of lemon cookies Fatimah baked?

(1) 2 : 3 : 1

(2) 2 : 3 : 2

(3) 2 : 3 : 5

(4) 2 : 3 : 10

15. Jolene had a total of 130 Singapore and Malaysia stamps. $\frac{1}{2}$ of the Singapore stamps were 10 fewer than $\frac{1}{3}$ of the Malaysia stamps. How many Singapore stamps did Jolene have?

(1) 40

(2) 60

(3) 90

(4) 126

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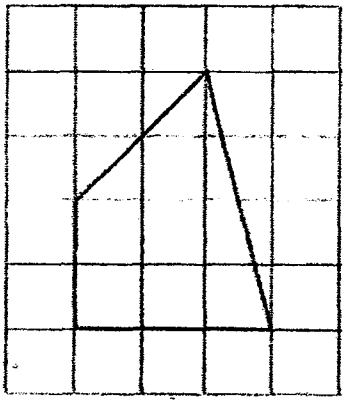
Section B (20 marks)

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]

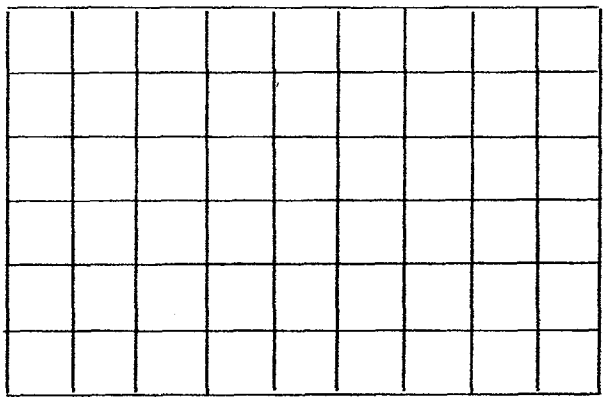
16. A 4-sided figure is drawn on square grid 1. Draw a different 4-sided figure which has the same area on square grid 2.

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Square grid 1



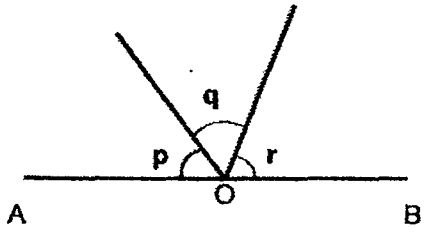
Square grid 2



17. Two boys collected plastic bottles for recycling. John collected $4w$ plastic bottles. Ali collected twice as many plastic bottles as John. How many plastic bottles did they collect together?
Give your answer in terms of w in the simplest form.

Ans : _____

18. In the figure below (not drawn to scale), AOB is a straight line and $\angle p = \angle q$. If $\angle r = 80^\circ$, find $\angle p + \angle r$.



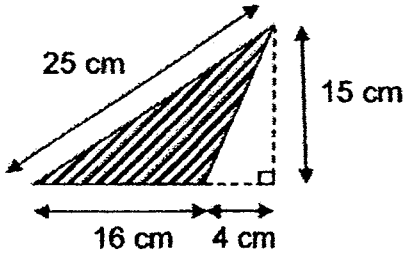
Ans: _____ °

Subtotal	/ 3

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19. Find the area of the shaded triangle shown below.

Do not write in this space



Ans : _____ cm^2

20. Two decimal numbers add together to get 1. One of the decimal numbers is 0.007. What is the other decimal number?

Ans : _____

21. Ken is k years old. Jenny is 4 times as old as Ken. Paul is $\frac{1}{2}$ as old as Jenny. Express Paul's age in terms of k.

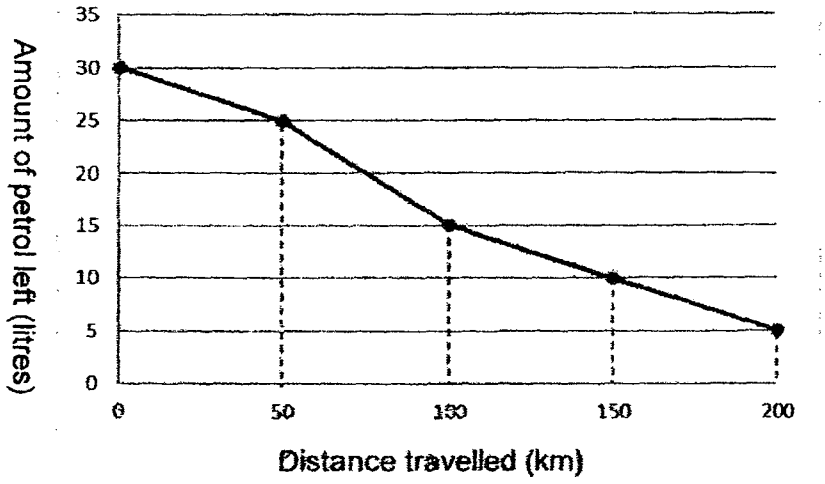
Ans : _____ years old

Subtotal	/ 3

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22. The line graph below shows the amount of petrol left in a lorry and the distance it travelled.

Do not write in this space



When the lorry had travelled 150 km, how much petrol was **used**?

Ans : _____ litres

23. Two numbers are in the ratio 4 : 5. One of the numbers is 60. There are two possible values for the other number. What are the two possible values?

Ans : _____ and _____

Subtotal	/ 2

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24. A library imposes a fine on overdue books. The rate for the fine is as follows:

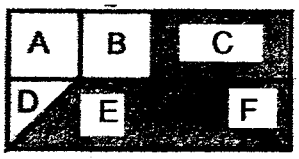
Do not write in this space

Fine for 1st day	$0.25
Fine for each subsequent day	$0.40

Jeremy has a book that is overdue for 5 days. How much does he need to pay?

Ans: $_____

25. The figure below is a rectangle made up of 2 identical rectangles cut into six parts, A, B, C, D, E and F. A and B are squares. Each square is $\frac{1}{8}$ of the figure.



What fraction of the figure is shaded?

Ans : _____ .

Subtotal	**/ 2**

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

26. Kit spent a total of $\$8n$ on a book, a file and a pen. The book cost twice as much as the file. The pen cost \$3.

(a) Express the total cost of the book and file in terms of n.
(b) If $n = 3$, how much did the file cost?

Do not write in this space

Ans : (a) \$ _____

(b) \$ _____

27. A cyclist went 1km up a hill at 4 km/h. Then she went 1km down the hill at 6 km/h. What is her average speed for whole journey?

Ans : _____ km/h

Subtotal	/ 4

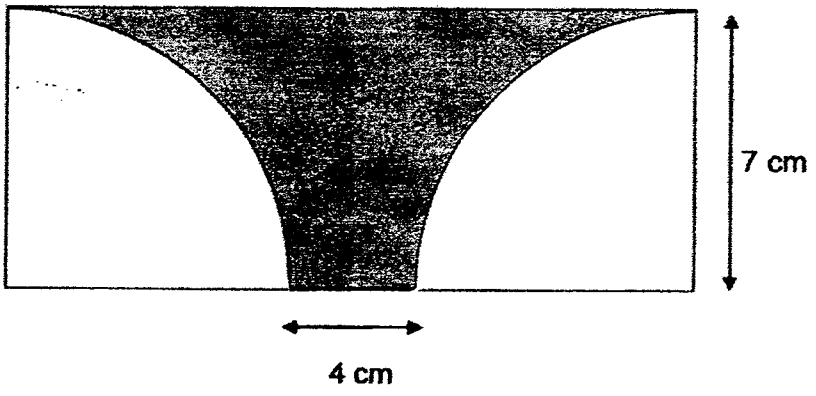
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28. A mini bus has a seating capacity of either 21 adults or 28 children. 10 adults and 12 children are already seated inside the mini bus, how many more adults can board the mini bus?

Do not write in this space

Ans: _____

29. Two quadrants are drawn inside a rectangle. Find the perimeter of the shaded part. (Take $\pi = \frac{22}{7}$)



Ans: _____ cm

Subtotal	/ 4

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30. Mei Mei chose a number less than 20.
She divided it by 2 and then added 6
She then divided this result by 3.
Her answer was 4.5.
What was the number she started with?

Do not write in this space

Ans: _____

END OF PAPER 1

Subtotal	/ 2

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SEMESTRAL ASSESSMENT 1 – 2017
PRIMARY 6

MATHEMATICS

Paper 2

Total Time for Paper 2: 1 hour 40 minutes

5 Short Answer Questions (10 marks)

13 Structured / Long Answer Questions (50 marks)

INSTRUCTION TO CANDIDATES

1. **Write your name and index number in the space provided.**
2. **Do not turn over the page until you are told to do so.**
3. **Follow all instructions carefully**
4. **Answer all questions and show your workings clearly.**
5. **You are allowed to use a calculator.**

Marks Obtained

Total		**/ 60**

Name : _____ ( )

Class : 6_____

Date : 9 May 2017 **Parent's Signature :_____**

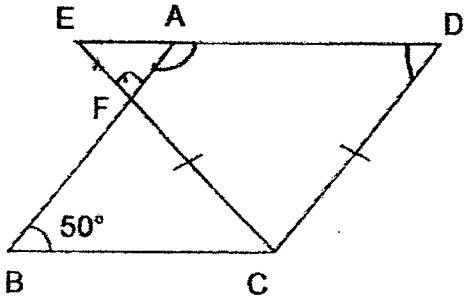
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Paper 2 (60 marks)

Questions 1 to 5 carry 2 marks each. Show your workings clearly in the space below it and write your answer in the space provided. Give your answers in the units stated.

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1. In the figure below, not drawn to scale, ABCD is a rhombus. If $\angle FBC = 50°$ and CE = CD, find $\angle EFA$.



Ans: _____ °

2. Ray has 358 marbles, Ali has 310 marbles and Tom has 241 marbles. How many marbles must Ray and Ali give to Tom altogether so that they will each have the same number of marbles?

Ans: _____

Subtotal	/ 4

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3. Yasmin uses grey and white tiles to form figures that follow a pattern as shown below.

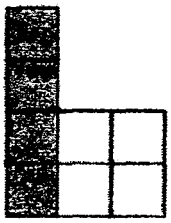


Figure 1

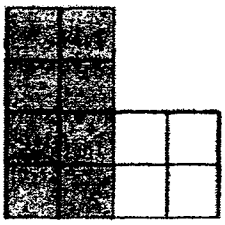


Figure 2

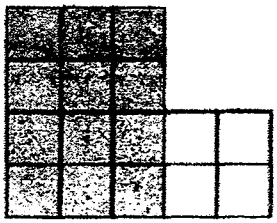
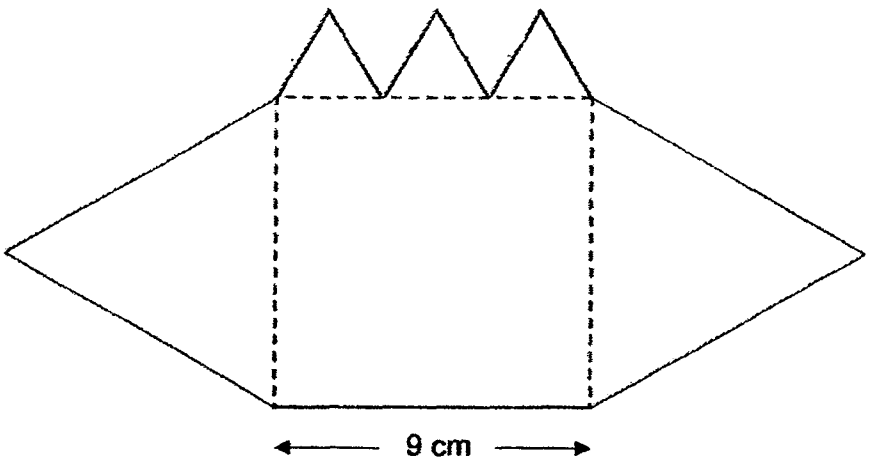


Figure 3

Find the difference between the number of grey and white tiles in Pattern 25.

Ans: _____

4. The figure below shows five equilateral triangles and a square of side 9 cm each. What is the perimeter of the figure?



Ans: _____ cm

Subtotal	/ 4

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5. The ratio of Seth's age to his father's age is 2 : 7 at present. Twelve years later, the ratio will become 2 : 5. Find Seth's present age.

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Ans: _____ years old

Subtotal	/ 2

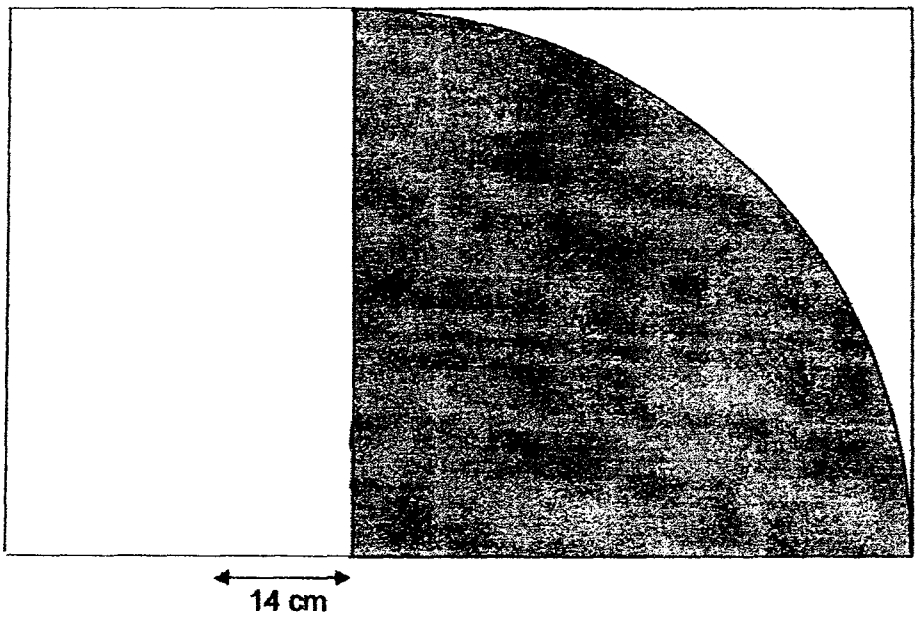
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For each question from 6 to 18, **show your workings** clearly in the space below it and write your answer in the space provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question.
Remember to include the units wherever possible.

6. The figure below shows quadrants within squares of different sizes.

Find the area of the shaded quadrant. (Take $\pi = \frac{22}{7}$)

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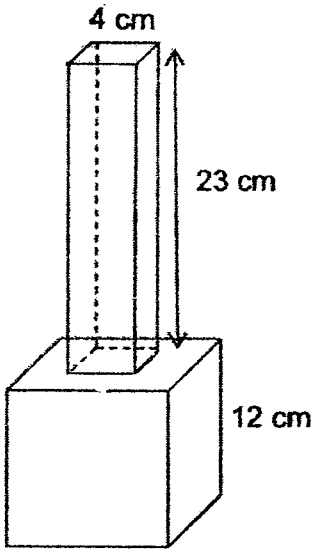
Ans: _____ .[3]

Subtotal	/ 3

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7. The figure below shows an empty flower vase of height 35 cm. It is made from two containers. The top container is in the shape of a cuboid which has a square base of side 4 cm and height 23 cm. The bottom container is in the shape of a cube of side 12 cm. Find the volume of the whole flower vase.



Ans: _____ [3]

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8. In a quiz game two people will have to answer 100 questions each. They score one point for each correct answer. The quiz game has not ended yet. Each person has already answered 90 questions. The table shows the results so far.

Do not write in this space

Person A	Person B
60% of the first 90 questions correct	50% of the first 90 questions correct

What is the minimum number of points that Person A must get from the last 10 questions in order to win the quiz game?

Ans: _____. [3]

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9. The total length of the blue and yellow ribbons Martha had was 221 cm. After using $\frac{3}{4}$ of the blue ribbon and $\frac{4}{5}$ of the yellow ribbon, she was left with $\frac{1}{2}$ as much yellow ribbon as blue ribbon. How much blue ribbon did she use?

Do not write in this space

Ans: _____ [3]

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10. Albert and Xavier started out on a 10-km walkathon at the same time. Both of them were walking at uniform speeds. When Xavier completed the 10-km walkathon, Albert still had 2.5 km to walk. Albert then completed the walk 30 min later.

Find Xavier's walking speed in km/h.

(Give your answer correct to 2 decimal places)

Ans:_____ [3]

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11. Box A contained 50-cent coins while Box B contained 20-cent coins. Box B had 53 more coins but the value of the coins in Box A was $8.30 more than the value of the coins in Box B. How much money was there in Box A?

Do not write in this space

Ans: _____ [3]

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Do not write in this space

12. Mr Lee had a total of 378 apples and oranges. He sold $\frac{1}{3}$ of his oranges and bought another 14 apples. After which, the number of apples he had was $\frac{1}{4}$ the number of oranges. How many more oranges than apples did he have at first?

Ans: _____ [4]

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13. The usual price of a television is 20% more than the usual price of a computer. During the Great Singapore Sale, 20% discount was given on the television and 25% discount was given on the computer. Due to the promotion, the money collected from one computer was $210 less than that of one television. What is the usual price of one television?

Do not write in this space

Ans: _____ .[4]

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14. At a game stall, every child needed 4 tokens to exchange for a prize, while an adult needed 5 tokens. The ratio of the number of adults to the number of children who exchanged their tokens for prizes was 2 : 1 and a total of 1092 tokens were collected by the game stall, how many tokens were collected from the children?

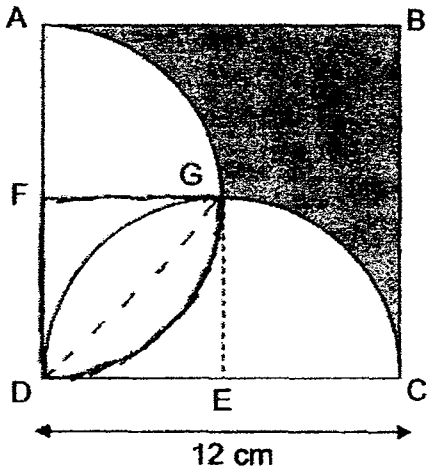
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Ans: _____ [4]

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15. The figure below is not drawn to scale.
It is formed by a square with 2 identical semi-circles in it.
ABCD is a square of side 12 cm.
AGD and DGC are semicircles with centres F and E respectively.

Do not write in this space



For each of the following, use the calculator value of π to find
(a) the area of the shaded part, correct to 1 decimal place.
(b) the perimeter of the shaded part, correct to 1 decimal place.

Ans :(a) _____ [3]

(b) _____ [2]

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16. Mrs Ong had some pears and lemons in 2 baskets. In basket A, the number of pears to the number of lemons was in the ratio 5 : 9. In basket B, there were thrice as many pears as lemons. After Mrs Ong transferred $\frac{1}{3}$ of the lemons from basket A to basket B, the number of fruits left in basket A was 187 and the ratio of the number of pears to the number of lemons in basket B became 7 : 8. How many fruits are there in ~~Box~~ basket B in the end?

Do not write in this space

Ans: _____ [5]

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17. At noon, a bus travels from Town X to Town Y at an average speed of 60 km/h. At the same time, a van travels from Town Y to Town X. At 3 p.m., the bus and the van are 30 km apart after having passed each other earlier. If the bus arrives at Town Y at 5 p.m., find the time at which the van will arrive at Town X.

Do not write in this space

Ans: _____ [5]

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18. Jie Min and Rudy had a total of 470 red marbles and 600 blue marbles. 40% of Jie Min's marbles were red while the rest were blue. 60% of Rudy's marbles were red while the rest were blue. After giving some red marbles to Rudy, Jie Min had 32 more red marbles than Rudy. How many red marbles did Jie Min give to Rudy?

Do not write in this space

Ans: _____ [5]

End of Paper 2

Remember to check your work.

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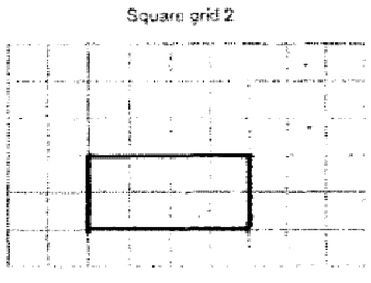
ANSWER KEY

YEAR	:	2017
LEVEL	:	PRIMARY 6
SCHOOL :	:	NAN HUA PRIMARY
SUBJECT :	:	MATHEMATICS
TERM	:	SA1

Paper 1

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

Q16



Q17 12w

Q18 130°

Q19 120 cm^2

Q20 0.993

Q21 2k years old

Q22 20 litres

Q23 48 and 75

Q24 $1.85

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Q25 $\frac{11}{16}$

Q26 (a) $1B + 1F + 1P = \$8n$

$\underline{\$(8n - 3)}$

(b) $8 \times 3 \rightarrow 24$

$24 - 3 \rightarrow 21$

$21 \div 3 \Rightarrow \underline{\$7}$

Q27 $4\frac{4}{5}$ or 4.8 km/h

Q28

A	:	C
21	:	28
3	:	4

$12 \div 4 \rightarrow 3$

$3 \times 3 \rightarrow 9$

$9 + 10 \rightarrow 19$

$21 - 19 \Rightarrow \underline{2}$

Q29 44 cm

Q30 15

Paper 2

Q1 $180 - 50 \rightarrow 130$

$180 - 130 \rightarrow 50$

$180 - 50 - 50 \Rightarrow \underline{80°}$

Q2 Total $\rightarrow 358 + 310 + 241 = 909$

Each same $\rightarrow 909 \div 3 = 303$

Ali must give $\rightarrow 310 - 303 = 7$

Ray must give $\rightarrow 358 - 303 = 55$

$55 + 7 \Rightarrow \underline{62 \text{ marbles}}$

Q3 $25 \times 4 \rightarrow 100$

$100 - 4 \Rightarrow \underline{96}$

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Q4 $9 \div 3 = 3$
$3 \times 2 = 6$
$6 \times 3 = 18$
$9 \times 5 = 45$
$45 + 18 = \underline{63 \text{ cm}}$

Q5 18 years old

Q6 2464 cm^2

Q7 Cube volume $\rightarrow 12 \times 12 \times 12 = 1728$
Cuboid volume $\rightarrow 4 \times 4 \times 23 = 368$
Total volume $\rightarrow 1728 + 368 \Rightarrow \underline{2096 \text{ cm}^3}$

Q8 2 points

Q9

	2u		1u	
B	$\frac{1}{4}$	=	$\frac{1}{5}$	Y
B	$\frac{2}{8}$	=	$\frac{1}{5}$	Y

Total units $\rightarrow 8u + 5u = 13$
$13u \rightarrow 221$
$1u \rightarrow 221 \div 13 = 17$
$8u - 2u \rightarrow 6u$
$6 \times 17 \Rightarrow \underline{102 \text{ cm}}$

Q10 Albert's speed $\rightarrow 2.5 \div \frac{1}{2} = 5$
$10 - 2.5 = 7.5$
Time (X) $\rightarrow 7.5 \div 5 = 1\frac{1}{2}$

Xavier's speed $\rightarrow 10 \div 1\frac{1}{2} = 6.666 \approx \underline{6.67 \text{ km/h}}$

Q11 $31.50

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Q12 $7u = 378 + 14 \rightarrow 392$

$1u = 392 \div 7 \rightarrow 56$

$5u + 14 = 5 \times 56 + 14 \Rightarrow \underline{294}$

Q13

T	:	C
6	:	5
30	:	25
120	:	100
96	:	75

$96u - 75u = 21$

$21u = 210$

$1u = 210 \div 21 \rightarrow 10$

$10 \times 120 \Rightarrow \underline{\$1200}$

Q14

A	:	C
2	:	1

$A \rightarrow 2u \times 5 = 10u \} 14u$

$C \rightarrow 1u \times 4 = 4u \}$

$1092 \div 14 \rightarrow 78$

$78 \times 4 \Rightarrow \underline{312 \text{ tokens}}$

Q15 (a) 51.5 cm^2

Q15 (b) $\frac{1}{4} \times \pi \times 2 \times 6 = 3\pi$

$12 + 12 + 3\pi + 3\pi$

$= 24 + 6\pi$

$\approx 42.84 \Rightarrow \underline{42.8 \text{ cm}}$

Q16 $187 \div 11 = 17$

$17 \times 6 = 102$

$17 \times 5 = 85$

$102 \div 2 = 51$

$24 - 7 = 17$

$51 \div 17 = 3$

$72 + 63 = \underline{135 \text{ fruits}}$

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Q17 $60 \times 2 = 120$

$30 \div 60 = \frac{1}{2}$

$\frac{1}{2}$ h = 30 min

Speed of van $\rightarrow$ $150 \div 3 = 50$

$150 \div 50 = 3$

Q18 93 red marbles

End

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