HENRY PARK PRIMARY SCHOOL
2014 PRELIMINARY EXAMINATION
MATHEMATICS
PRIMARY 6

PAPER 1
(BOOKLET A)

Name: _____( )

Parent's Signature

Class: Primary 6_____

_____

Marks:

| | | |
|---|---|---|
| Paper 1 | Booklet A | 20 |
| | Booklet B | 20 |
| Paper 2 | | 60 |
| **Total** | | 100 |

Total Time for Booklets A and B: 50 min

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.
You are not allowed to use a calculator.

Booklet A:
Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each of the questions, four options are given. One of them is the correct answer. Choose the correct answer (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet provided.

(20 marks)

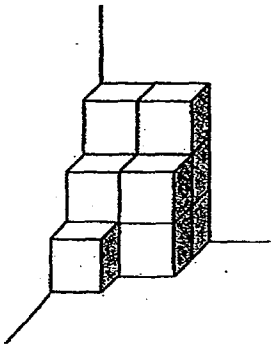
1. Which of the following numbers is the largest?

(1) 0.097
(2) 0.103
(3) 0.24
(4) 0.7

2. What is the value of $5 \div \frac{5}{12}$?

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

3. The figure shows a solid made up of identical cubes. The side of each cube is 2 cm. Find the volume of the solid.



(1) 44 $cm^3$
(2) 64 $cm^3$
(3) 68 $cm^3$
(4) 88 $cm^3$

4. The volume of a cube is 64 $m^3$. What is the area of one of its faces?

(1) 32 $m^2$
(2) 16 $m^2$
(3) 8 $m^2$
(4) 4 $m^2$

5. The table below shows the scores obtained by 3 players in a computer game.

| Name of players | Score |
|---|---|
| Ali | 88 |
| Bing Chong | 70 |
| Peter | ??? |

The average score of the 3 players was 90. What was Peter's score?

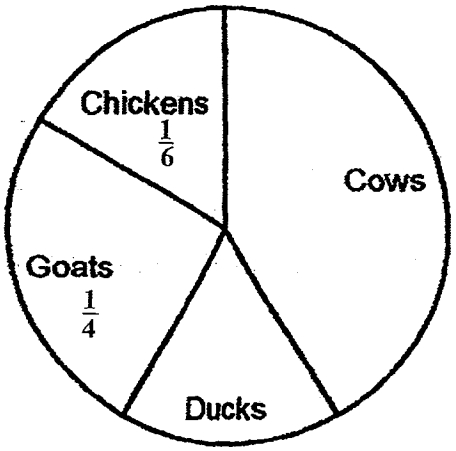
(1) 112

(2) 122

(3) 192

(4) 212

6. The pie chart below shows the number of different types of animals in a farm. There was an equal number of chickens and ducks. What fraction of the animals in the farm were cows?



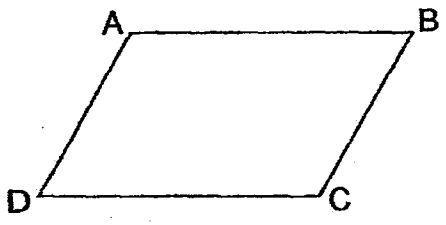

(1) $\frac{1}{3}$

(2) $\frac{5}{12}$

(3) $\frac{7}{12}$

(4) $\frac{2}{3}$

7 The figure below shows a parallelogram.




Which of the following statements is definitely true?

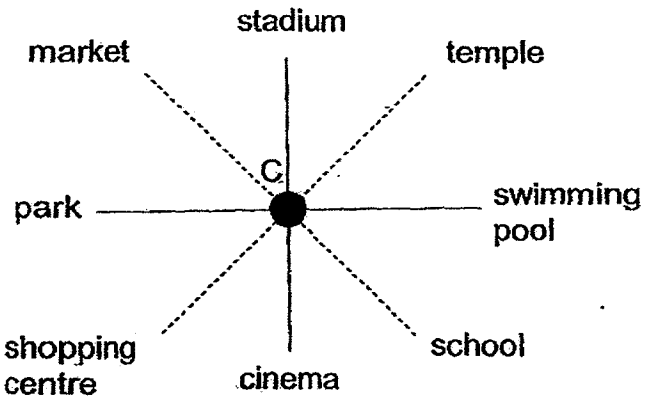
(1) $\angle CDA = \angle DAB$

(2) $\angle BCD + \angle CDA = 180°$

(3) AB is parallel to DA.

(4) AB is perpendicular to BC.

8 In the figure, Caleb is standing at the point marked C. He is facing the market. What will he face when he turns 135° clockwise?




(1) cinema

(2) park

(3) stadium

(4) swimming pool

9. Ben, Donald and Frank shared \$800 in the ratio 2 : 5 : 3. Donald spent \$150 of his share of money. How much money had he left?

(1) \$240

(2) \$250

(3) \$350

(4) \$400

10. Simplify $7p - 4 + 5p + 9$.

(1) $2p + 5$

(2) $2p - 5$

(3) $12p + 5$

(4) $12p + 13$

11. Selina has 3 more twenty-cent coins than fifty-cent coins. The total value of all her coins is \$6.20. How many twenty-cent coins does she have?

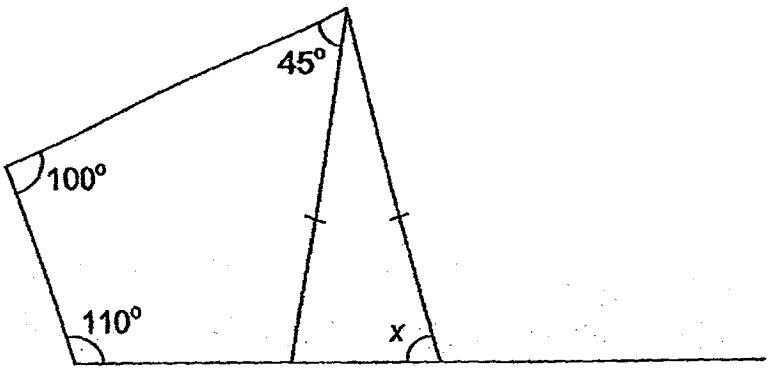
(1) 11

(2) 8

(3) 7

(4) 4

12. In the diagram below, find $\angle x$.




(1) 30°

(2) 75°

(3) 85°

(4) 105°

13. The table shows the cost of photocopying.

| Number of pages | Cost per page Black and white | Cost per page Colour |
|---|---|---|
| First 20 pages | 6 ¢ | 8 ¢ |
| Subsequent pages | 3 ¢ | 5 ¢ |

How much will Mr Chong have to pay to photocopy 30 pages in black and white and 15 pages in colour?

(1) $ 2.70

(2) $ 3.00

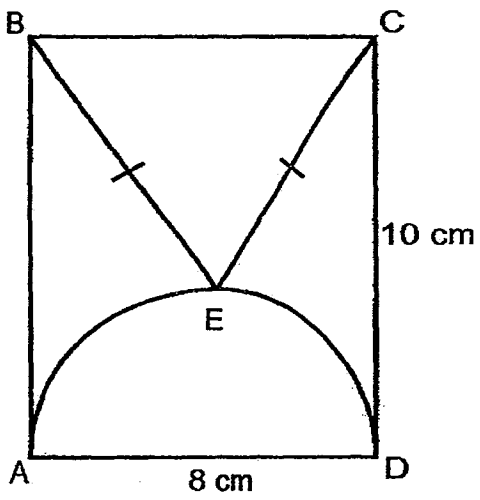
(3) $ 3.30

(4) $ 3.90

14. Karen and Lynn shared the total cost of a present. Karen paid \$10 more than $\frac{5}{8}$ of what Lynn paid. If Lynn paid \$14 more than Karen, what was the cost of the present?

(1) \$24
(2) \$64
(3) \$104
(4) \$114

15. The figure shows an isosceles triangle, BCE, and a semi-circle drawn inside a rectangle, ABCD. Find the area of triangle BCE.




(1) 20 $cm^2$
(2) 24 $cm^2$
(3) 32 $cm^2$
(4) 40 $cm^2$

(Go on to Booklet B)

HENRY PARK PRIMARY SCHOOL
2014 PRELIMINARY EXAMINATION
MATHEMATICS
PRIMARY 6

PAPER 1
(BOOKLET B)

Name: _____( )

Class: Primary 6_____

/ 20

Total Time for Booklets A and B: 50 min

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.

You are **not** allowed to use a calculator.

Booklet B:
Questions 16 to 25 carry 1 mark each. Write your answers in the spaces provided.
For questions which require units, give your answers in the units stated.

(10 marks)

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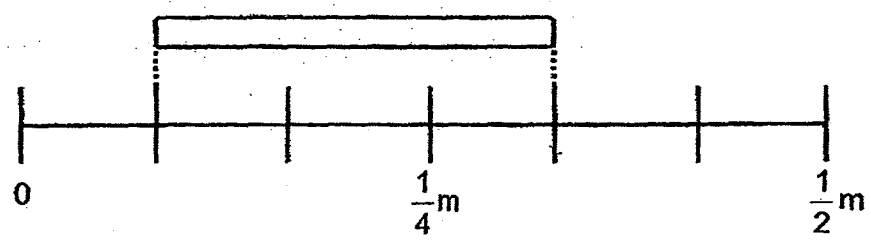
16. What is the length of the rod in the figure? Give your answer in its simplest form.



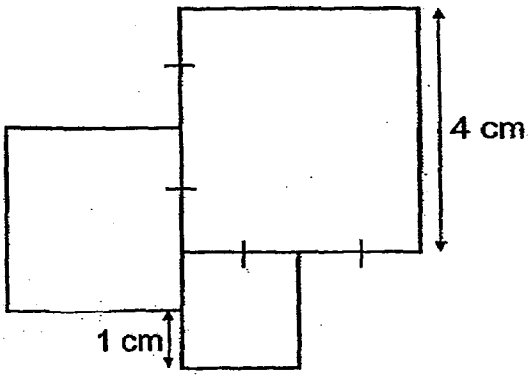

Ans: _____ m

17. Find the value of $8 + (24 - 18 \div 6) \div 7$.

Ans: _____

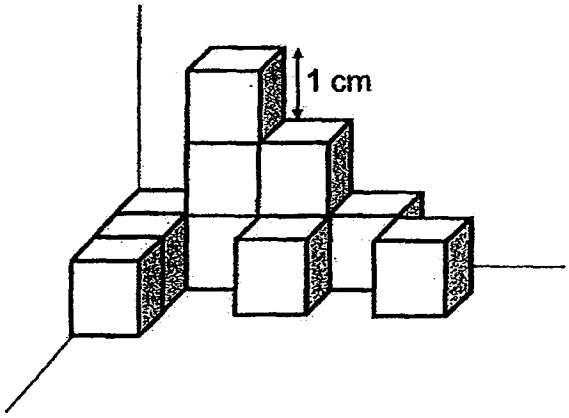
Do not write in this space

18. The figure below is made up of 3 squares. Find the perimeter of the figure.




Ans: _____ cm

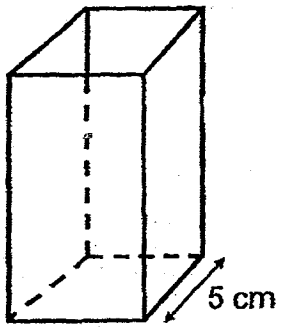
19. The solid below is made up of 1-cm cubes. How many more of such cubes are needed to form a solid with a volume of 20 $cm^3$?




Ans: _____

Do not write in this space

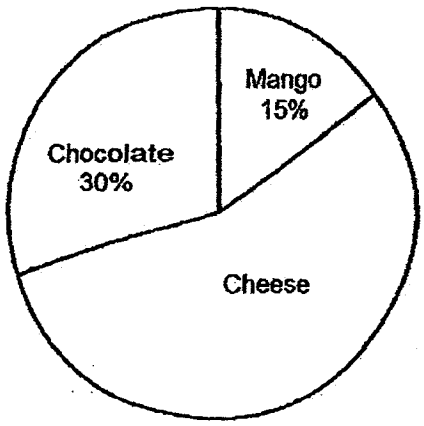
20. The figure shows a container with a square base and a height of 15 cm. Find the volume of the container.




Ans: _____ $cm^3$

Do not write in this space

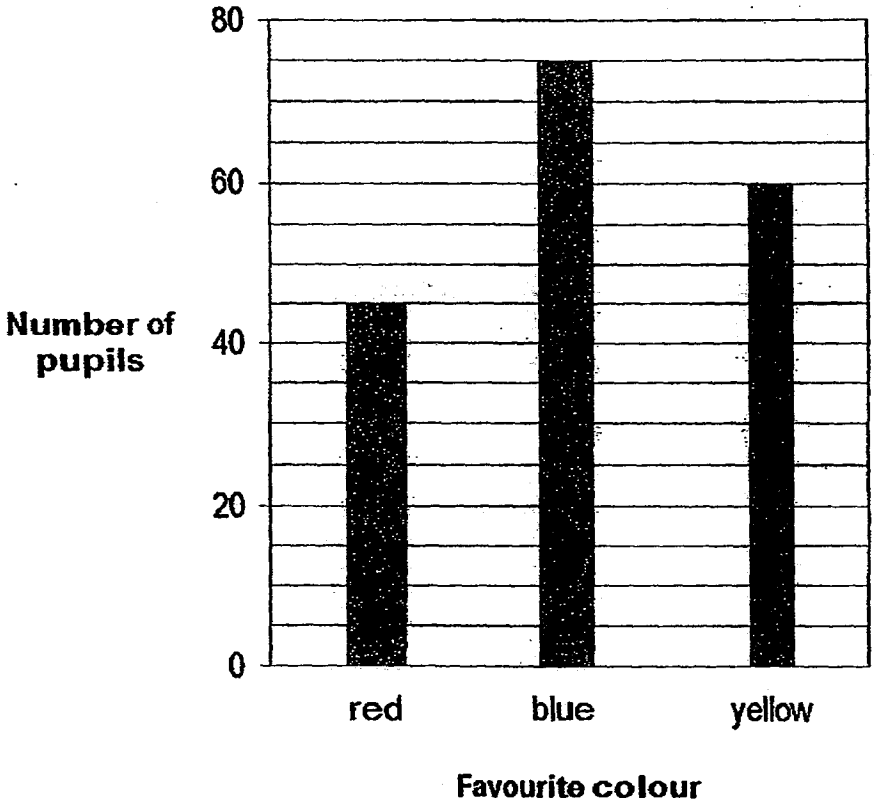
21. The pie chart below shows the number of different types of cakes sold at a bakery. What is the ratio of the number of mango cakes sold to the number of cheese cakes sold? Give your answer in its simplest form.




Ans: _____

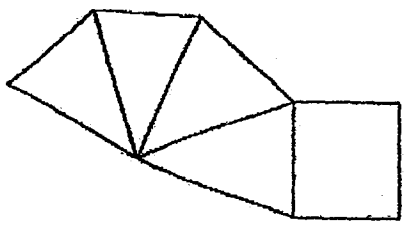
22. 180 pupils were asked to choose their favourite colour. The bar graph below shows the number of pupils who chose each of the colours.

What percentage of the pupils chose red as their favourite colour?




Ans: _____ %

23. Name the solid figure formed by the net below.

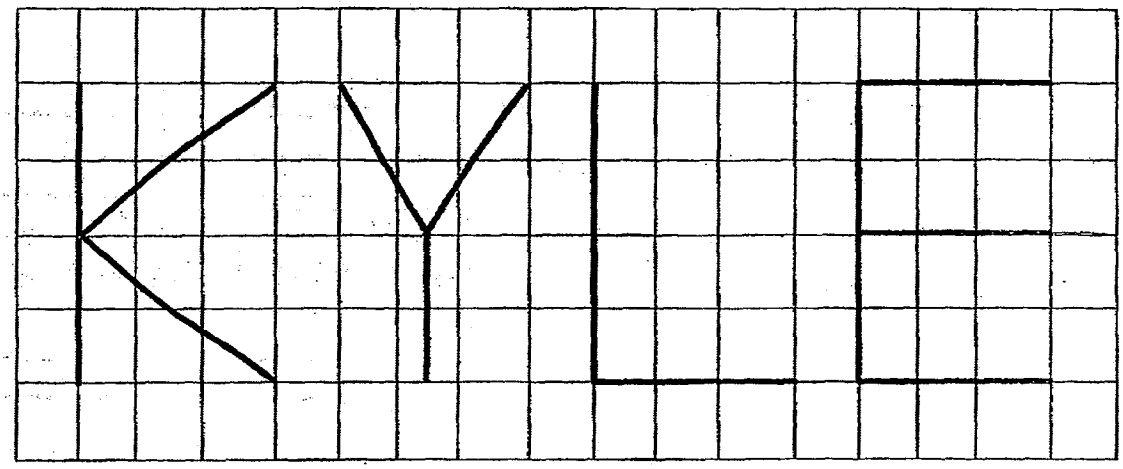


Ans: _____

Do not write in this space

24. In the diagram below, the letters K, Y, L and E are drawn on a square grid.

Do not write in this space



List all the letters that have a line of symmetry?

Ans: _____

25. John's mass was 48 kg at the beginning of the year. He lost 6 kg at the end of the year. What was the percentage decrease in his mass that year?

Ans: _____ %

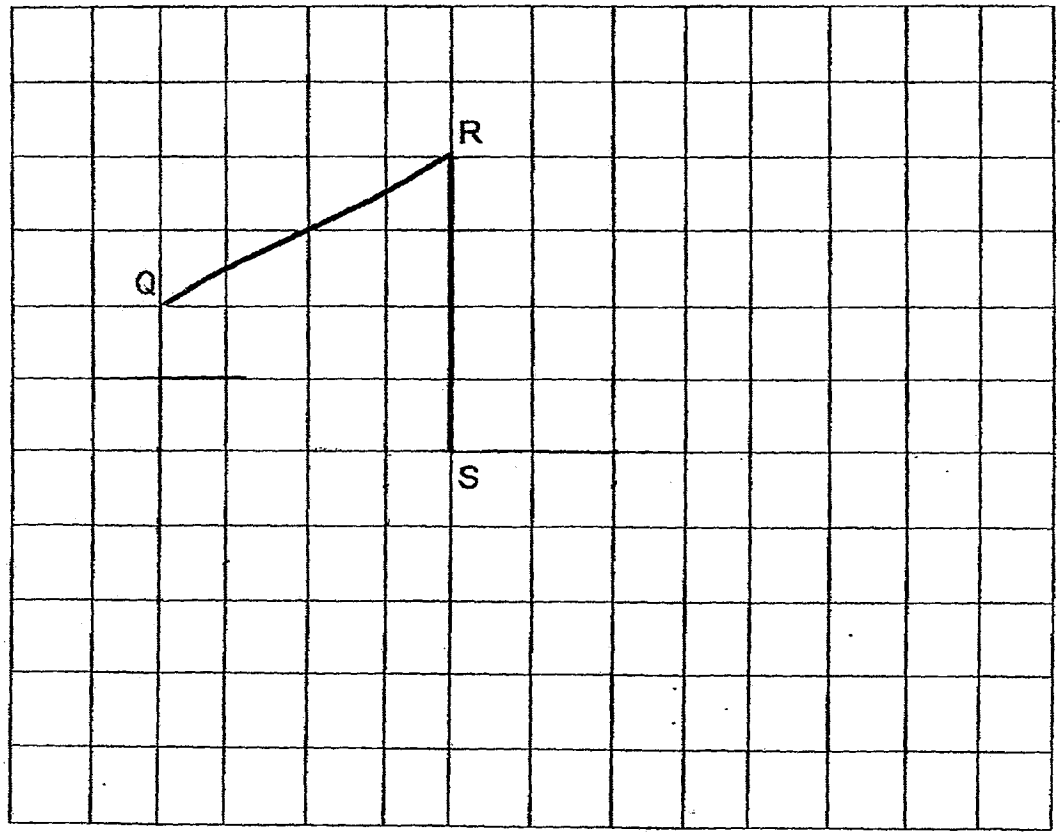
Questions 26 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

26. In the square grid below, two sides of a parallelogram PQRS have been drawn.

(a) Complete the drawing of the parallelogram PQRS.

(b) RS also forms one side of a triangle RST in which ∠RST is a right angle and the length of RS is twice the length of ST. Complete the drawing of triangle RST.




Do not write in this space

27. Mei Ling spent $\frac{1}{6}$ of her savings on a T-shirt and $\frac{3}{10}$ of the remainder on a skirt. She had \$63 left. What was the total amount she spent on the T-shirt and skirt?

Do not write in this space

Ans: \$ _____

28. Jack could either buy 25 pens or 10 files with his money. He decided to spend all his money on both pens and files. Given that he bought 8 files, how many pens did he buy?

Ans: _____

29. A rectangular tank measures 60 cm by 50 cm by 30 cm. It contains 20 litres of water. How many more litres of water would be needed to fill the tank to $\frac{3}{4}$ of its height?

Do not write in this space

Ans: _____ litres

30. At present, Peter's age is $\frac{3}{7}$ of Kelly's age. In 10 years' time, the ratio of Peter's age to Kelly's age will be 11 : 19. What is Peter's present age?

Ans: _____ years

End of Paper

HENRY PARK PRIMARY SCHOOL
2014 PRELIMINARY EXAMINATION
MATHEMATICS
PRIMARY 6

PAPER 2

Name: _____( )

Class: Primary 6_____

/ 60

Time for Paper 2: 1 h 40 min

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Show your working clearly as marks are awarded for correct working.

Write your answers in this booklet.

You are allowed to use a calculator.

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 space provided. For questions which require units, give your answers in the units stated.

(10 marks)

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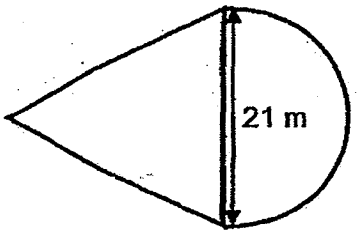
1. The figure below is made up of an equilateral triangle and a semi-circle of diameter 21 m. Find the perimeter of the figure. (Take $\pi = \frac{22}{7}$ )




Ans: _____ m

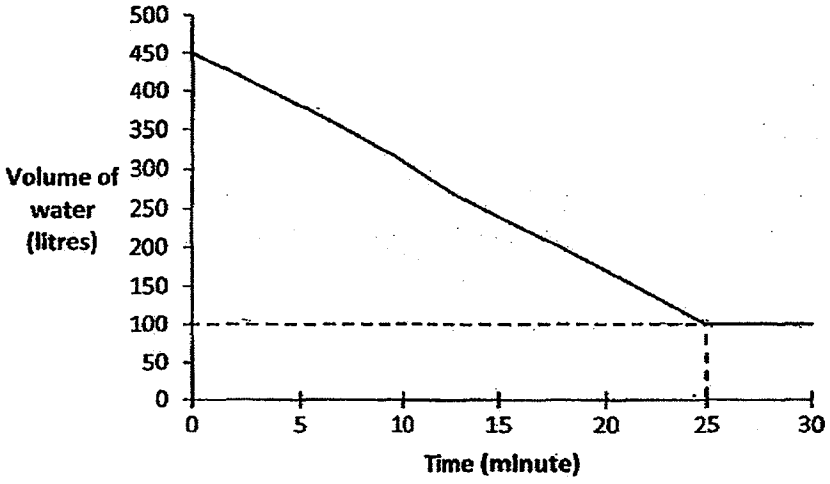
Do not write in this space

2. The length of Rod A is $\frac{1}{2}$ of the length of Rod B and the length of Rod B is $\frac{1}{3}$ of the length of Rod C and $\frac{1}{4}$ of the length of Rod D. What fraction of the total length of the 4 rods is C?

Ans: _____

3. A tank was completely filled with water. The water was drained out of the tank at a constant rate for 25 minutes. The graph below shows the volume of water in the tank over a period of 30 minutes.

Do not write in this space




(a) What fraction of the tank was filled with water at the end of 25 minutes? Express your answer in the simplest form.

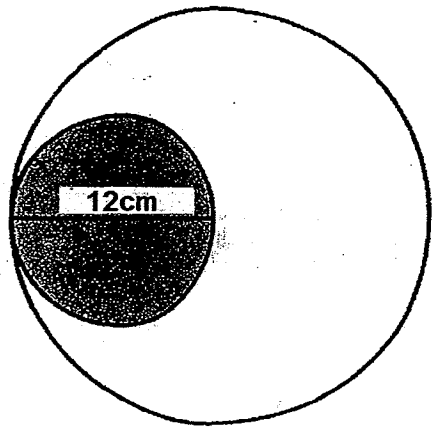
(b) How many litres of water was drained out of the tank in 1 minute?

Ans: (a) _____

(b) _____ litres

4. The figure below shows a small circle of diameter 12 cm inside a big circle of radius 12 cm. Find the area of the unshaded part of the big circle. Leave your answer in terms of $\pi$.

Do not write in this space




Ans: _____ $cm^2$

5. Jun Kee had some bags of nails. The average number of nails in each bag was 146. After Jun Kee added another bag containing 128 nails, the average number of nails in each bag became 143. How many bags of nails were there after the new bag was added?

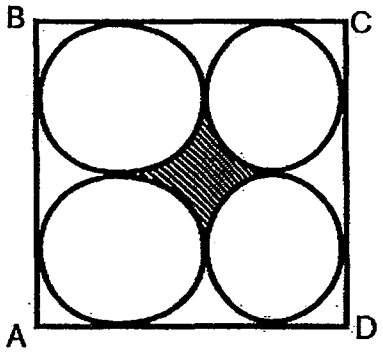
Ans: _____

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)

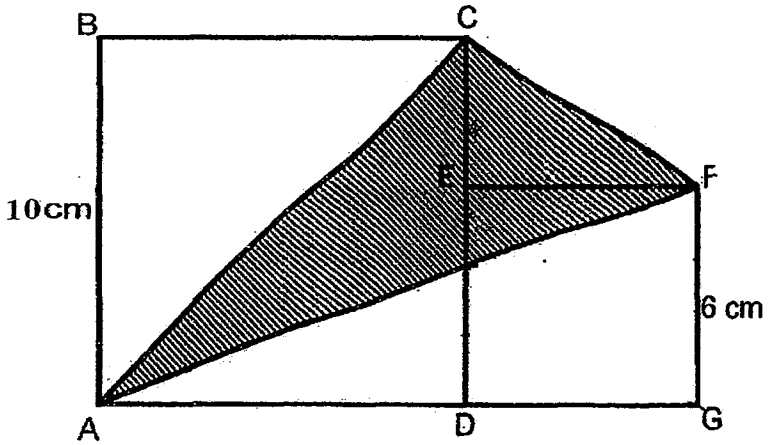
6. The figure shows 4 identical circles in a square, ABCD. The area of the square is 64 $cm^2$. Find the area of the shaded part. (Take $\pi = 3.14$)

Do not write in this space



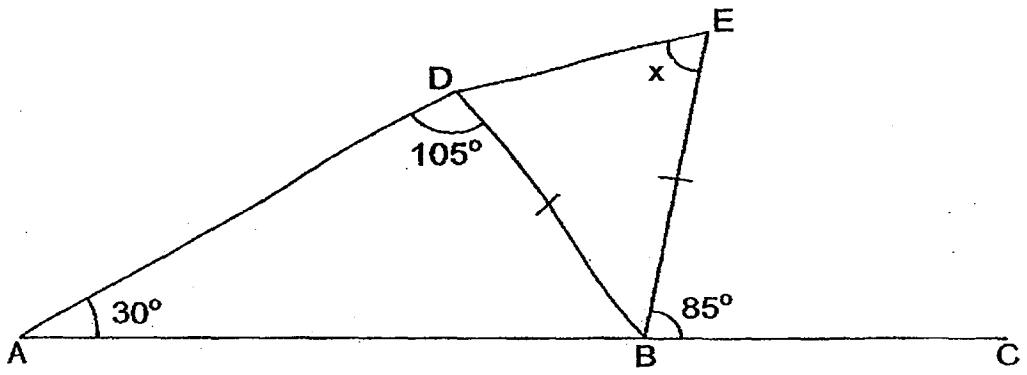

Ans: _____ [3]

7. In the figure, ABCD and DEFG are squares. Find the area of the shaded triangle ACF.




Ans: _____ [4]

8. In the figure below, ABC is a straight line and BDE is an isosceles triangle. Find $\angle x$.




Ans: _____ [3]

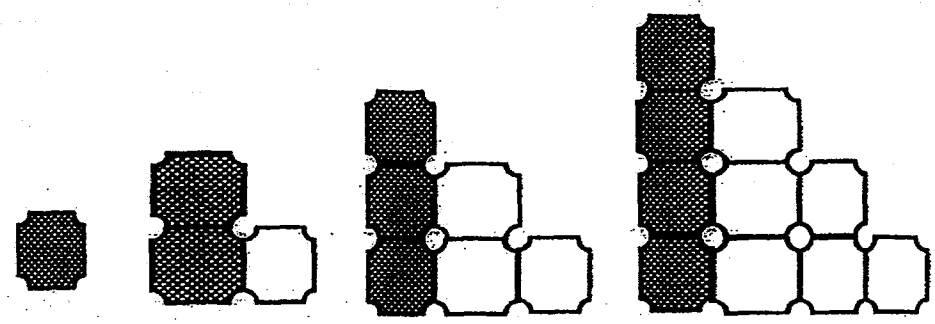
9. Mark and Jie Ming started walking from the same spot in opposite directions along a straight path. They walked for 30 minutes. At the end of the walk, they were 5 km apart. Mark's average speed was 4 km/h. What was Jie Ming's average speed in km/h?

Ans: _____ [4]

Do not write in this space

10. Look at the pattern below.

Do not write in this space




(a) Complete the table below by filling in the blank.

| Pattern Number | No. of unshaded tiles | No. of shaded tiles | Total No. of tiles |
|---|---|---|---|
| 1 | 0 | 1 | 1 |
| 2 | 1 | 2 | 3 |
| 3 | 3 | 3 | 6 |
| 4 | 6 | 4 | (a) ? |

(b) How many unshaded tiles will there be in Pattern number 15?

Ans: (a) _____ [1]

(b) _____ [2]

11. The length of a rectangle is increased by 25% and its breadth is increased by 30%. What is the percentage increase in its area?

Do not write in this space

Ans: _____ [4]

12. Ali is $k$ years old. Bala is four times as old as Ali and Cai Yun is 6 years younger than Bala.

(a) Express Cai Yun's age in terms of $k$.

(b) Ali is 10 years old now. In how many years' time will Cai Yun be three times as old as Ali?

Ans: (a)_____ [1]

(b)_____ [3]

13. There are two neon lights in a shop. The red light flashes every 6 minutes and the yellow light flashes every 9 minutes. Both neon lights flashed together when Annette walked into the shop.

**Including** the flashes Annette saw when she first stepped into the shop, how many times will she see the 2 neon lights flash together if she stays in the shop for 1 hour?

Do not write in this space

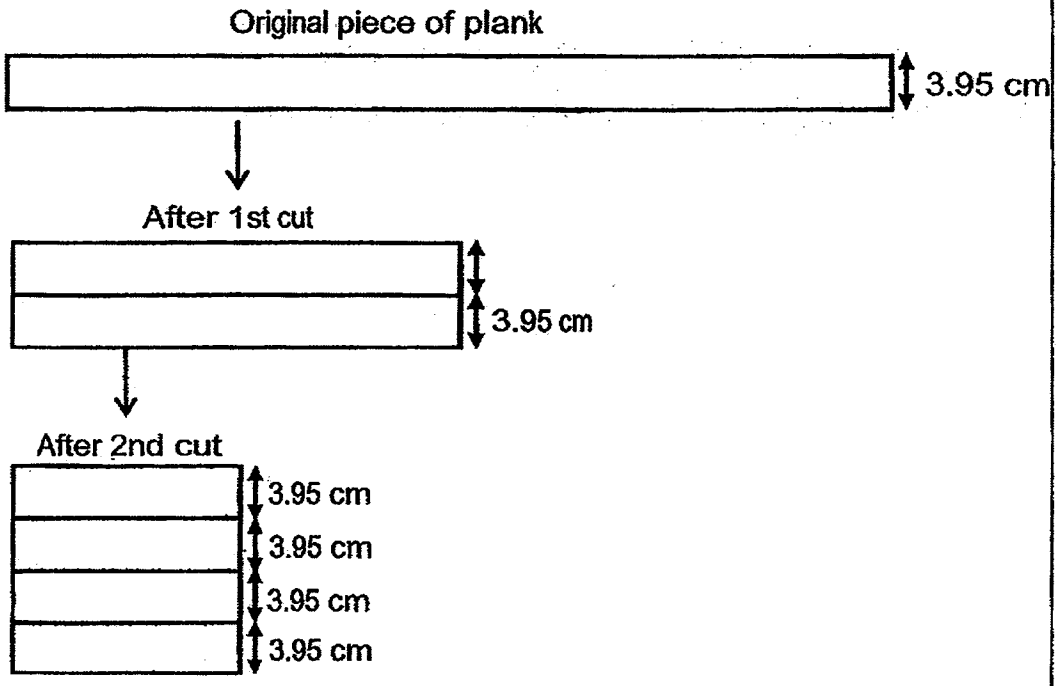
Ans: _____ [3]

14 The thickness of one piece of plank is 3.95 cm. It is cut into halves and the two pieces are placed on top of each other. These 2 pieces are halved again and placed on top of the other two pieces.

(a) Repeating the process, how many pieces of planks are there after a total of 6 cuts?

(b) What will be the height of the final pile of the pieces of planks after a total of 6 cuts? Round off your answer to the nearest m.

Do not write in this space




Ans: (a) _____ [1]

(b) _____ [2]

15. Patricia baked 120 more cupcakes than muffins. She sold $\frac{5}{6}$ of the cupcakes and $\frac{1}{5}$ of muffins. In the end she had 75 more muffins than cupcakes left. How many cupcakes and muffins did she bake at first?

Do not write in this space

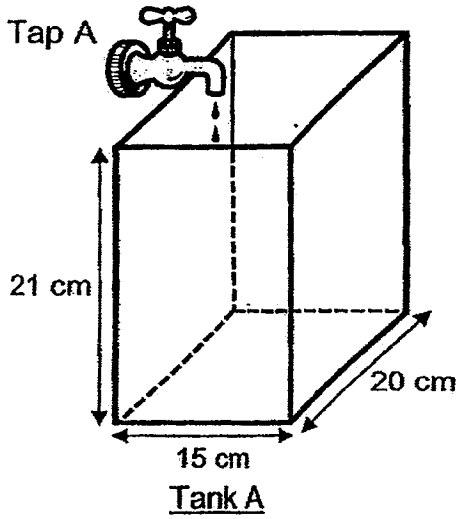
Ans: _____ [5]

16. The diagram below shows 2 tanks, Tank A and Tank B of different dimensions. Tank A is completely empty while Tank B is filled with water to the brim.

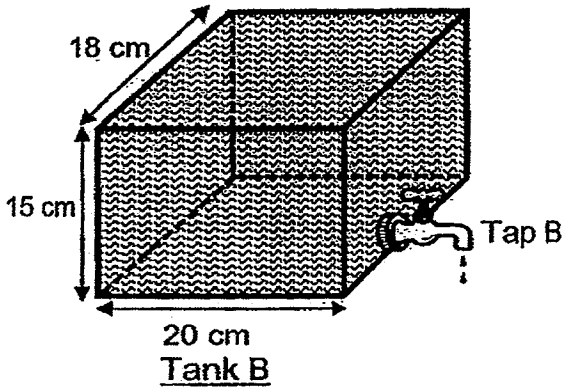
Do not write in this space

Water from Tap A flows at a rate of 1.2 litres per minute while water drains from Tap B at a rate of 0.72 litres per minute. Both taps are turned on at the same time. After some time, the heights of the water level in both tanks became the same. (1 litre = 1000 $cm^3$)

(a) Find the time taken for the heights of the water level to be the same in both tanks.
(b) Find the height of the water level at that point of time.



Tank A



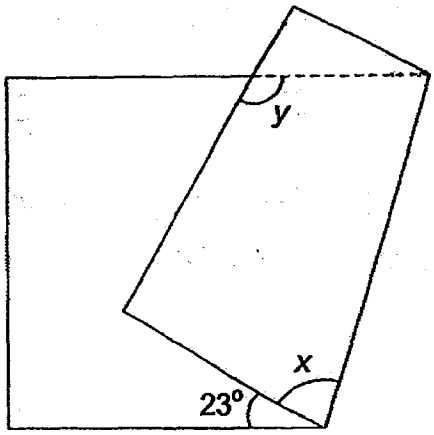
Tank B

Ans: (a) _____ [3]

(b) _____ [2]

17. A rectangular piece of paper was folded as shown below.

(a) Find $\angle x$.
(b) Find $\angle y$.




Do not write in this space

Ans: (a) _____ [1]

(b) _____ [3]

18. Sally bought some chocolates and gave half of them to Mabel. Sally also bought some lollipops and gave half of them to Mabel. Mabel ate 7 lollipops and Sally ate 16 chocolates.

After that, the number of lollipops and chocolates Mabel had were in the ratio 1 : 8 and the number of lollipops and chocolates Sally had were in the ratio 1 : 5. How many lollipops did Sally buy at first?

Do not write in this space

Ans: _____ [5]

-END OF PAPER-

Setters: Mrs Norah Idil Mrs Priscilla Heng Mrs Josephine Lai
Ms Yew Hew Mei Mr Bernard Li

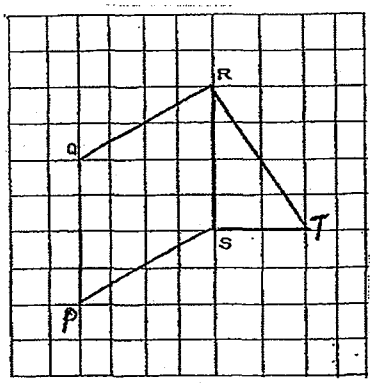
**EXAM PAPER 2014**
**SCHOOL : HENRY PARK**
**PRIMARY : P6**
**SUBJECT : MATHEMATICS**
**TERM : SA2**

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

**16)** ¼ **17)**11 **18)**26 cm **19)**9 **20)**375

**21)**3 : 11 **22)**25% **23)**pyramid **24)**KYE **25)**12.5

**26)**




**27)**7u = 63
5u = 63/7 x 5
=$454

**28)**10 – 8 = 2
10 F = 25p
2F = 25/10 x 2 = 5 pens

**29)**60 x 50 x 30 = 90000 cm3
¾ x 90 = 67.5
67.5 – 20 = 47.5

**30)**19p – 11p = 8p
7u – 3u = 4u
4u = 8p
3u = 8/4 x 3 = 6p
11p = 3u + 10
11p = 6p + 10
5p = 10
1p = 2
3u = 6 x 2 = 12years

**Paper 2**

1)21 x 22/7 = 66
66÷2 = 33
33 + 21 + 21 = 75

2)1 + 2 + 6 + 8 = 17
ANS: 6/17

3)a)100/450 = 2/9

b)450 − 100 = 350
350÷25 = 14

4)Π x 12 x 12 = 144Π
Π x 6 x 6 = 36Π
144Π - 36Π = 108Π

5)146 − 142 = 3
146 − 128 = 18
18÷3 = 6

6)$\sqrt{64}$ = 8
8÷2 = 4
4 x 4 = 16
3.14 x 2 x 2 = 12.56
16 − 12.56 = 3.44cm$^2$

7)½ x 10 x 10 = 50
6 x 6 = 36
½ x 6 x 4 =12
½ x 16 x 6 = 48
50 + 36 + 12 − 48 = 50 cm$^2$

8)180 − 105 − 30 = 45
180 − 85 − 45 = 50
180 − 50 = 130
130÷2 = 65°

9)4 x 30/60 = 2
5 − 2 = 3
3÷½ = 6km/h

10)a)6 + 4 = 10
b)1+2+3....+13+14
=15 x 7 = 105

11)1.25 x 1.3 = 1.625
1.625 – 1 = 0.625
0.625 x 100 = 62.5%

12)a)A = K
B = 4K
C =(4K – 6)years old
b)C = 4 x 10 – 6 = 34
2u = 34 – 10 = 24
1u = 24 ÷ 2 = 12
12 – 10 = 2 years' time

13)18, 36, 54
1 + 3 = 4 times

14)a)2 x 2 x 2 x 2 x 2 x 2 = 64
b)64 x 3.95 = 252.8 cm
= 2.528m ≈3m

15)1/6 x 120 = 20
1/6 x 30u = 5u
4/5 x 30u = 24u
24u – 5u – 20 = 75
19u = 95
60u = 95/19 x 60 = 300
300 + 120 = 420

16)a)$\frac{1200}{20x15}$ = 14

$\frac{720}{20x18}$ = 2

4 + 2 = 6
15 ÷ 6 = 2.5 min

b)$\frac{1200 \times 2.5}{20 \times 15}$ = 10 cm

17)a)$180 - 23 = 157$

$\angle x = 157 \div 2 = 78.5°$

b)$180 - 23 - 78.15 = 78.85°$

$\angle y = 360 - 90 - 78.15 - 78.85 = 113°$

18)$5p = 8u - 16$

$1p = 1u + 7$

$5p = 5u + 35$

$8u - 16 = 5u + 35$

$8u - 5u = 35 + 16$

$3u = 51$

$1u = 51 \div 3 = 17$

$17 + 7 = 24$

$24 \times 2 = 48$