



RED SWASTIKA SCHOOL

2012 PRELIMINARY EXAMINATION

MATHEMATICS PAPER 1

Name : _____ ()

Class : Primary 6 / _____

Date : 24 August 2012.

BOOKLET A

15 Questions

20 Marks

Duration of Paper 1 (Booklets A & B): 50 minutes.

Note:

1. Do not open this Booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the Booklet.
3. Do not waste time. If a question is difficult for you, go on to the next one.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
 - (a) Page 1 to Page 5
 - (b) Questions 1 to 15
6. You are not allowed to use a calculator.

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 correct oval (1, 2, 3 or 4) on the
Optical Answer Sheet. (20 marks)

1 Which one of the following numbers is the smallest?

- (1) 10.79
- (2) 10.97
- (3) 10.907
- (4) 10.709

2 What is the value of $\frac{4}{7} \div 2$?

- (1) $\frac{2}{7}$
- (2) $\frac{7}{8}$
- (3) $1\frac{1}{7}$
- (4) $3\frac{1}{2}$

3 In a box of 56 ribbons, 32 of them are purple and the rest are red.
What is the ratio of the number of red ribbons to the number of purple
ribbons?

- (1) 3 : 4
- (2) 3 : 7
- (3) 4 : 3
- (4) 4 : 7

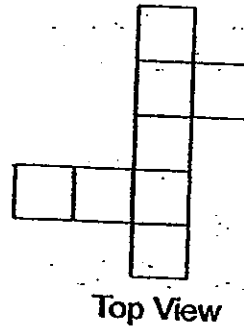
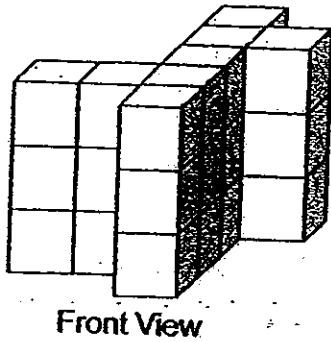
4 Express $73\frac{1}{4}\%$ as a decimal.

- (1) 0.7314
- (2) 0.7325
- (3) 73.14
- (4) 73.25

5 Which of the following is the same as 10 030 m?

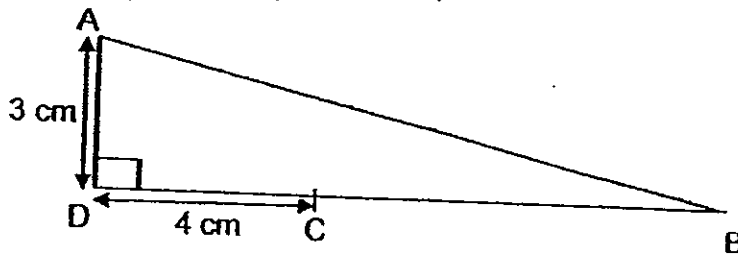
- (1) 10 km 3 m
- (2) 10 km 30 m
- (3) 100 km 3 m
- (4) 100 km 30 m

6 The diagrams below show the front view and top view of a solid. How many unit cubes are needed to form the solid?



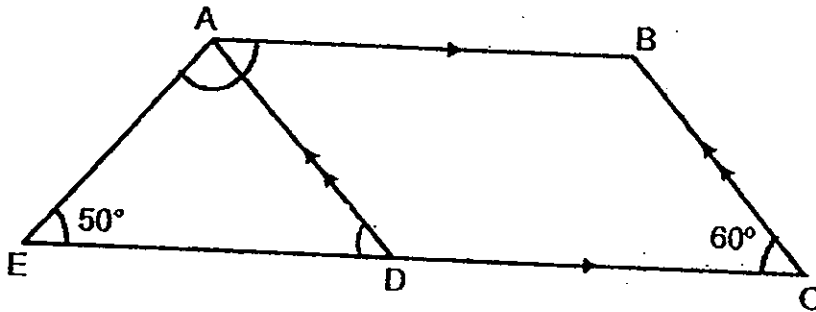
- (1) 20
- (2) 22
- (3) 24
- (4) 27

7 What is the area of triangle ABD given that CB is twice of CD?



- (1) 6 cm²
- (2) 12 cm²
- (3) 18 cm²
- (4) 36 cm²

- 8 In the figure below, not drawn to scale, ABCD is a parallelogram. EDC is a straight line. $\angle AED = 50^\circ$ and $\angle BCD = 60^\circ$. Find $\angle EAB$.

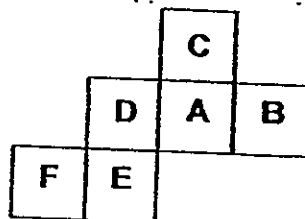


- (1) 70°
- (2) 110°
- (3) 120°
- (4) 130°

- 9 Mrs Lee poured 2 bags of sugar which had masses of 1.5 kg and 5 kg respectively into a container. She used $\frac{2}{5}$ of the total sugar. What was the mass of sugar left in the container?

- (1) 0.8 kg
- (2) 1.2 kg
- (3) 2.6 kg
- (4) 3.9 kg

- 10 The diagram below shows the net of a cube. If F is the base of the cube, which letter is at the top face of the cube?



- (1) A
- (2) B
- (3) C
- (4) D

11 Joanne was facing the North direction. She made a y° turn in the clockwise direction and then another 90° turn in the anti-clockwise direction. In the end, she was facing the east direction. What is the value of y ?

- (1) 90°
- (2) 180°
- (3) 270°
- (4) 360°

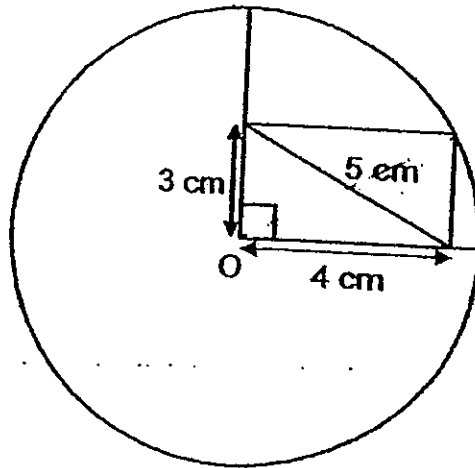
12 A cyclist was travelling at a speed of 200 m/min for 4 minutes. He then increased his speed by 50 m/min for the next 2 minutes. Find the total distance he travelled.

- (1) 900 m
- (2) 1 300 m
- (3) 1 500 m
- (4) 2 700 m

13 Pei Hua, Queenie and Ryan had some shells. The total number of shells Pei Hua and Ryan had was twice the number of shells Queenie had. The ratio of the number of shells Pei Hua had to the number of shells Ryan had was 5 : 3. Queenie and Ryan had 28 shells altogether. How many shells did Ryan have?

- (1) 12
- (2) 16
- (3) 20
- (4) 35

- 14 The figure below shows a rectangle 3 cm by 4 cm inscribed in a circle with O as the centre. Find the circumference of the circle, leaving your answer in terms of π .



- (1) 6π cm
- (2) 8π cm
- (3) 10π cm
- (4) 25π cm

- 15 Jaydon won a \$10 voucher at a funfair. He could redeem his voucher for the items as shown below. In how many different ways could he redeem the voucher, given that he would redeem exactly \$10 worth of items?

Redemption Booth	
Toy Guns	\$4 each
Stickers	\$3 each
Pens	\$1 each

- (1) 6
- (2) 7
- (3) 8
- (4) 9



RED SWASTIKA SCHOOL

2012 PRELIMINARY EXAMINATION

MATHEMATICS PAPER 1

Name : _____ ()

Class : Primary 6 / _____

Date : 24 August 2012

BOOKLET B

15 Questions
20 Marks

In this booklet, you should have the following:

- (a) Page 6 to Page 13
- (b) Questions 16 to 30

MARKS

	OBTAINED	POSSIBLE
BOOKLET A		20
BOOKLET B		20
TOTAL		40

Parent's Signature : _____

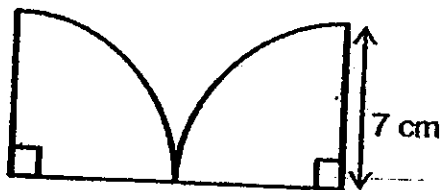
Questions 16 to 25 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

16 $60 \times 300 = \square \times 300 + 300$
What is the missing number in the box?

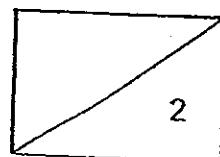
Ans: _____

17 The figure below shows two identical quadrants.

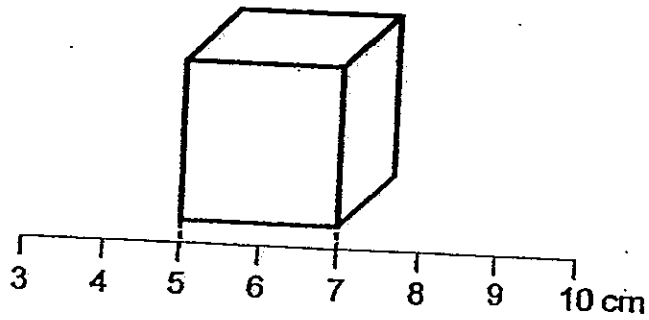
Find the area of the figure. (Take $\pi = \frac{22}{7}$)



Ans: _____ cm²

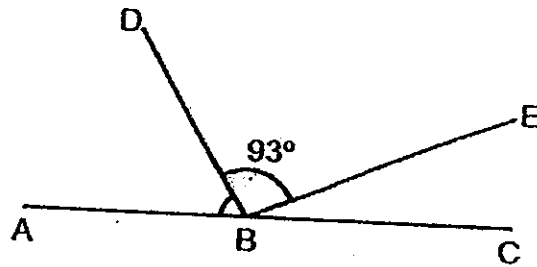


- 18 Find the volume of the cube below.

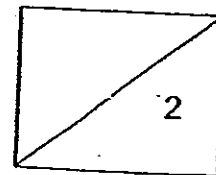


Ans: _____ cm³

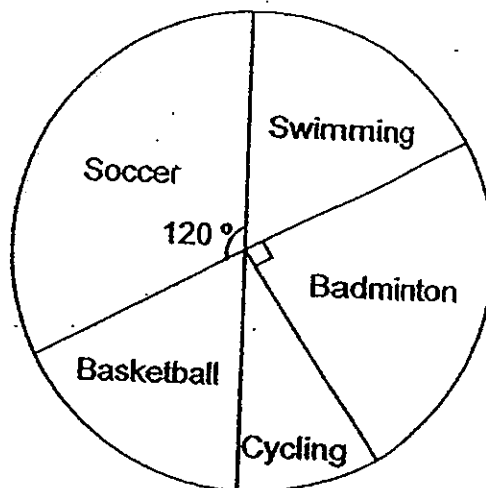
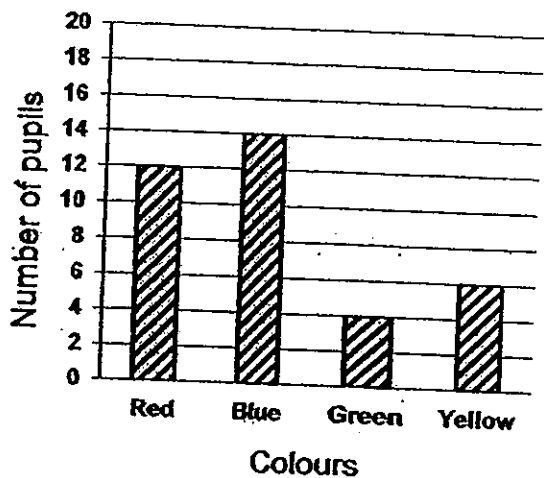
- 19 In the figure below, not drawn to scale, ABC is a straight line and $\angle DBE = 93^\circ$. Find $\angle DBA$ given that $\angle DBA$ is twice of $\angle EBC$.



Ans: _____ °



Shawn and Tricia each conducted a survey with all the pupils in Class 6Y. Tricia presented her data of the pupils' favourite colour in a bar graph while Shawn presented his data of the pupils' favourite sports in a pie chart. Use the information below to answer Questions 20, 21 and 22.



20 How many more pupils chose red as their favourite colour than green?

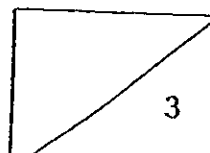
Ans: _____

21 How many pupils chose Badminton as their favourite sport?

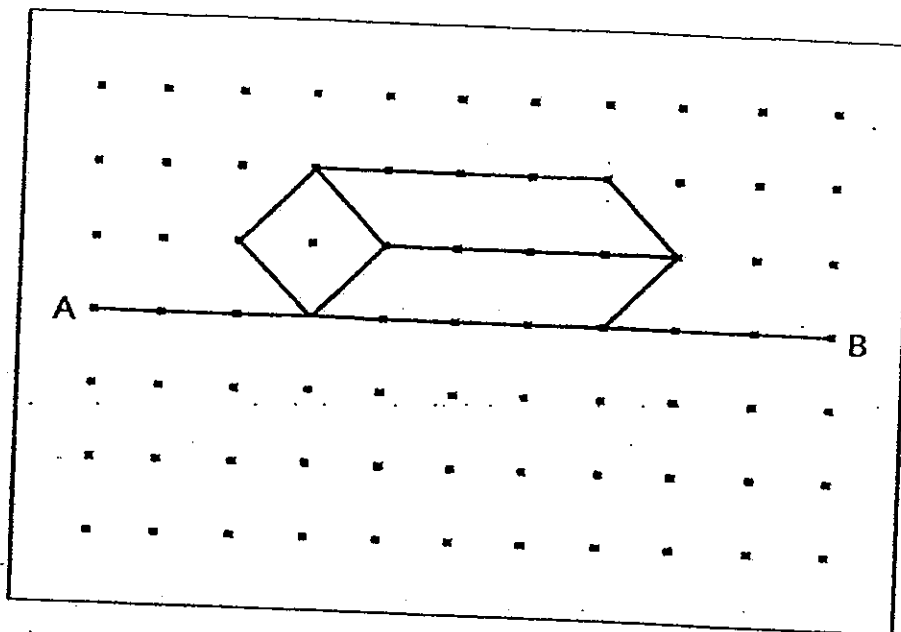
Ans: _____

22 What percentage of the pupils in the class chose soccer as their favourite sport?

Ans: _____ %

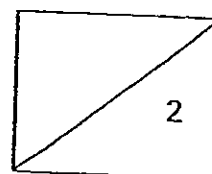


- 23 Complete the figure below to make it symmetrical about the line AB.



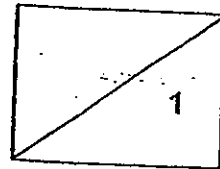
- 24 Sean and Alicia started jogging from the same place but in opposite directions along a straight road. After jogging for 2 hours, they were 14 km apart. Alicia's average jogging speed was 3 km/h slower than Sean's. Find the distance Alicia jogged.

Ans: _____ km



- 25 At 9.45 a.m., Jackie drove from Town A to Town B at a speed of 40 km/h while Tom drove from Town B to Town A at a speed of 60 km/h. Town A is 300 km from Town B. At what time will they meet?

Ans: _____ p.m.

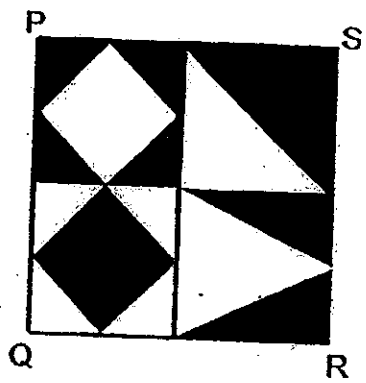


Questions 26 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

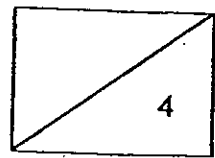
26 0.4 of a number is 1 800. What is 0.5 of the number?

Ans: _____

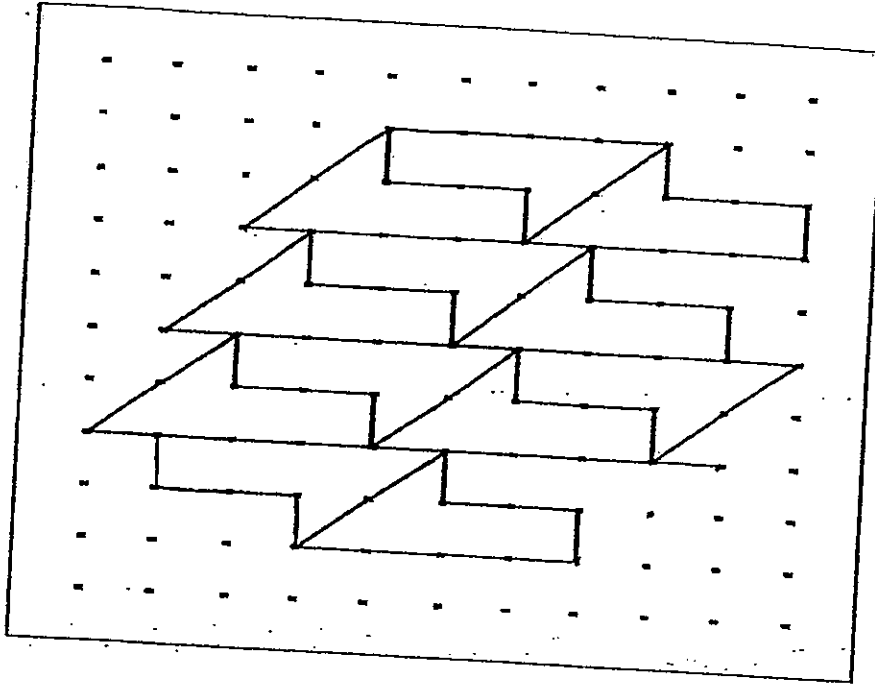
27 PQRS is a square as shown below. What percentage of PQRS is shaded?



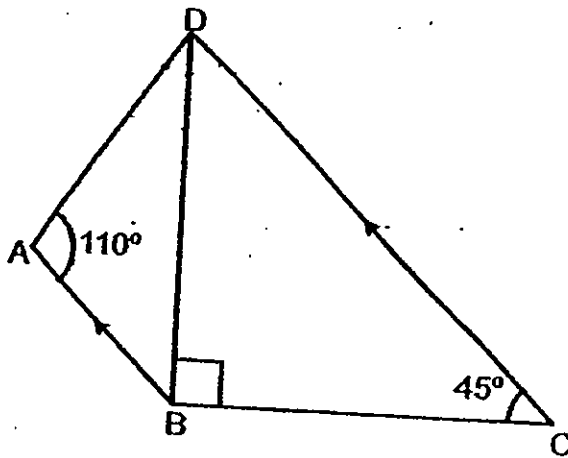
Ans: _____ %



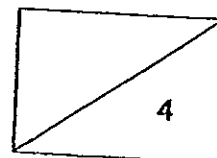
- 28 The diagram below shows part of a tessellation. Extend the tessellation by drawing two more unit shapes in the space provided in the box.



- 29 In the figure below, not drawn to scale, ABCD is a trapezium. Find $\angle ADB$.



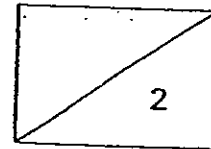
Ans: _____ °

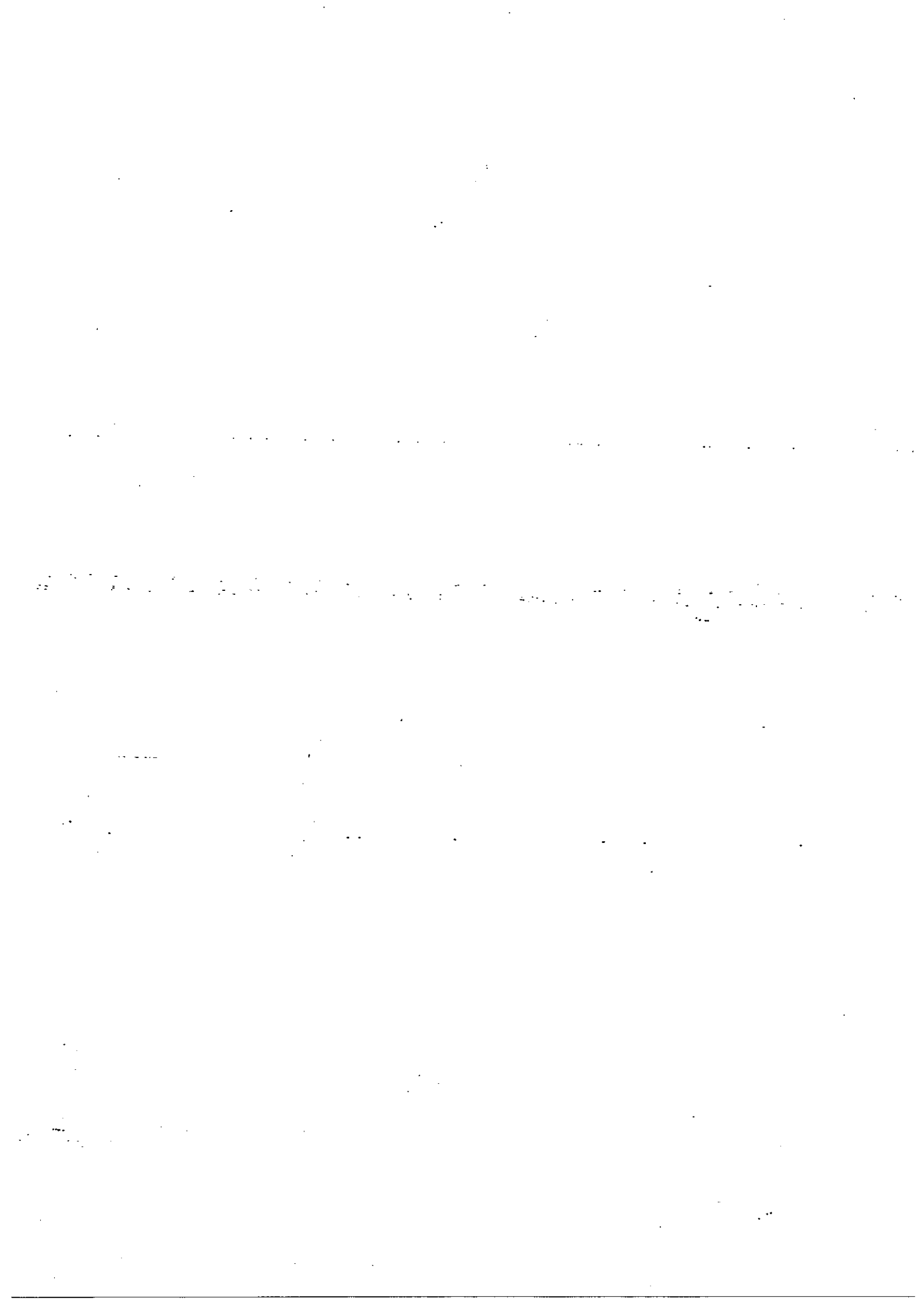


- 30 The average of 3 numbers is y more than the average of 43 and 77.
Find the sum of the 3 numbers in terms of y .

Ans: _____

END OF PAPER 1







RED SWASTIKA SCHOOL
2012 PRELIMINARY EXAMINATION
MATHEMATICS
PAPER 2

Name : _____ ()

Class : Primary 6 /

Date : 24 August 2012

18 Questions

60 Marks

Duration of Paper 2: 1 hour 40 minutes

Note:

1. Do not open this Booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the Booklet.
3. Do not waste time. If a question is difficult for you, go on to the next one.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this paper, you should have the following:
 - (a) Page 1 to Page 14
 - (b) Questions 1 to 18
6. You are allowed to use a calculator.

MARKS

	OBTAINED	POSSIBLE
PAPER 1		40
PAPER 2		60
TOTAL		100

Parent's Signature : _____

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

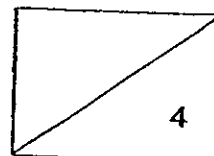
(10 marks)

- 1 Noel and Delise each has some money. If Noel gives Delise \$12, they will have the same amount of money. If Delise gives Noel \$12, Delise will have half as much as Noel. How much money does Delise have?

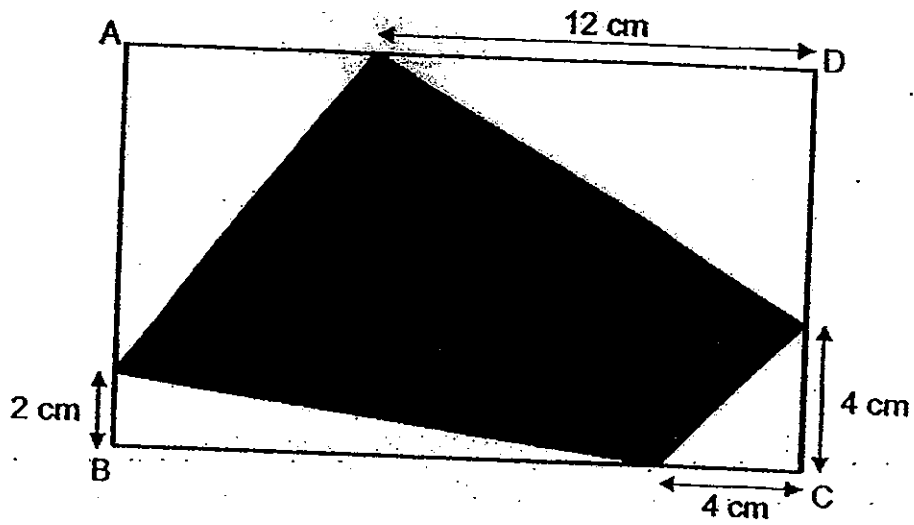
Ans: \$ _____

- 2 Diana had a sum of money. After spending $\frac{2}{5}$ of it on a cake and $\frac{5}{6}$ of the remainder on a present, she had \$8 left. How much money did Diana have at first?

Ans: \$ _____

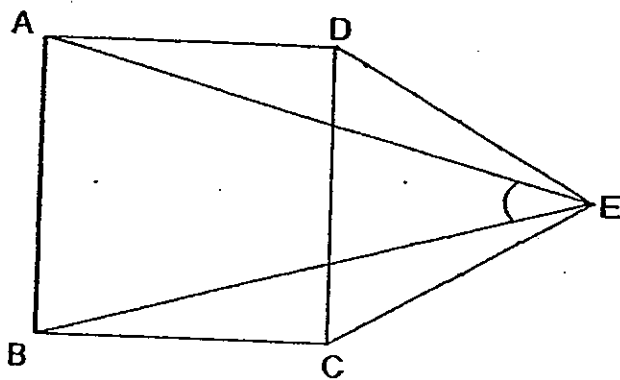


- 3 In the figure below, rectangle ABCD has an area of 120 cm^2 . Find the area of the shaded part.

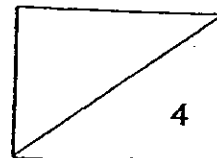


Ans: _____ cm^2

- 4 In the figure, not drawn to scale, ABCD is a square and CDE is an equilateral triangle. Find $\angle AEB$.

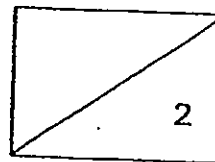


Ans: _____ $^\circ$



- 5 10% of the people at a party were girls. The ratio of the number of girls to the number of boys was 1 : 5. The ratio of the number of men to the number of women was 1 : 1. If there were y men, how many children were there at the party? Leave your answer in terms of y .

Ans: _____



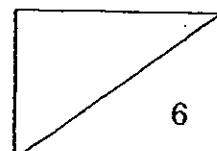
For Questions 6 to 18, show your working clearly in the space below each question and write your answers in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part-question. (50 marks)

- 6 Sarah had 10 more 50¢ coins than \$1 coins. After she exchanged all the 50¢ coins for \$1 coins, she had sixty-five \$1 coins altogether. How many \$1 coins did she have at first?

Ans: _____ [3]

- 7 Sharon and Han Ming had a total of 120 cards. Sharon gave $\frac{1}{5}$ of her cards to Han Ming. Then, Han Ming gave $\frac{1}{4}$ of his cards to Sharon. In the end, both of them had the same number of cards. How many cards did Sharon have at first?

Ans: _____ [3]

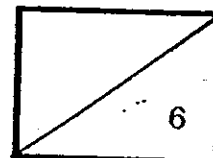


- 8 A certain number of passengers were on board a cruise ship in Port X. When the ship reached Port Y, 50% of the passengers left the ship and 135 new passengers boarded the ship. At Port Z, 25% of the passengers left and 314 new ones boarded the ship. Then, there were a total of 539 passengers on board the ship. How many passengers were on board the cruise ship at Port X?

Ans: _____ [3]

- 9 The ratio of the number of motorcycles to the number of cars in a carpark was 8 : 7. There was a total of 132 wheels. How many cars were there in the carpark?

Ans: _____ [3]



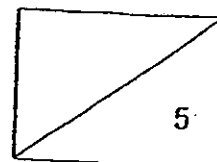
10 Alvin saves 40% as much as Theodor. Simon saves 30% more than Theodor. 20% of Dave's savings is equal to 10% of Alvin's savings.

(a) What is the ratio of Alvin's saving to Simon's savings to Theodor's savings?

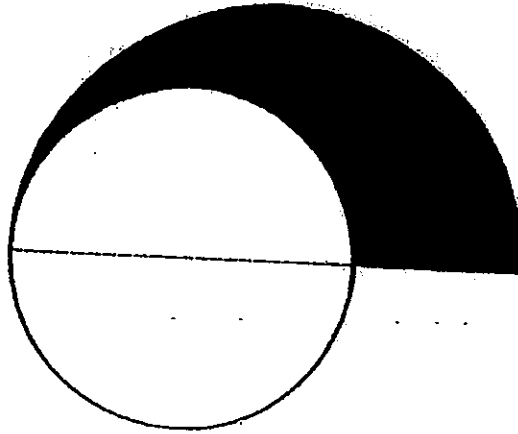
(b) If Theodor saves \$610, find the difference between Simon's savings and Dave's savings.

Ans: (a) _____ [1]

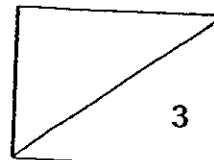
(b) _____ [4]



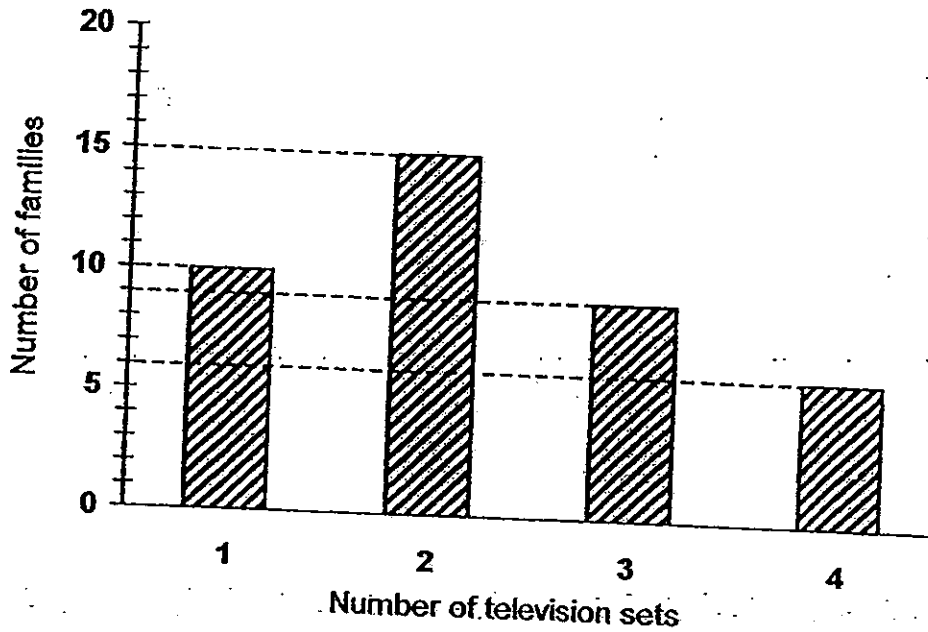
- 11 The figure below, not drawn to scale, shows a circle overlapping a larger semi-circle. If the ratio of the shaded area to the unshaded area is $5 : 8$, find the ratio of the radius of the circle to the radius of the larger semi-circle.



Ans: _____ [3]



- 12 The bar graph below shows the number of television sets owned by some families in a neighbourhood.

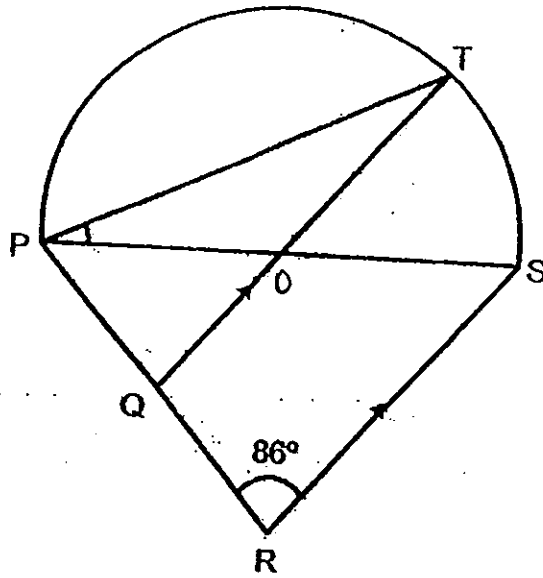


- (a) What percentage of the families owned at least 2 television sets?
- (b) What is the average number of television sets owned by the families in the neighbourhood? (Round off your answer to the nearest whole number.)

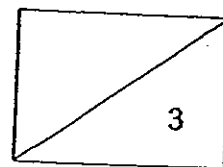
Ans: (a) _____ [2]

(b) _____ [2]

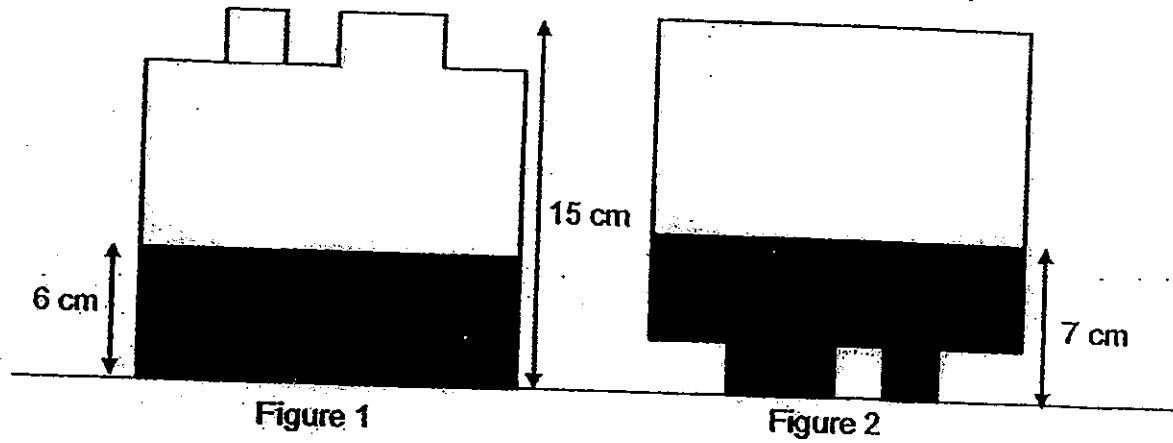
- 13 In the figure below, not drawn to scale, O is the centre of the semi-circle. $PR = RS$, $QT \parallel RS$ and $\angle PRS = 86^\circ$. Find $\angle OPT$.



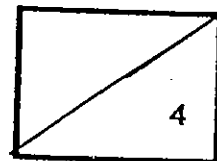
Ans: _____ [3]



- 14 A container filled with some water shown in Figure 1 below has a rectangular base area of 120 cm^2 . Figure 2 shows the same container being turned upside down. Find the capacity of the container in litres.



Ans: _____ [4]



- 15 Figure 1 and Figure 2 are made up of quadrants of similar radii. Find the difference in the unshaded area between Figure 2 and Figure 1. (Take $\pi = 3.14$)

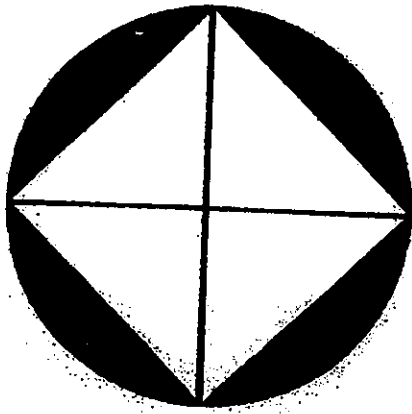


Figure 1

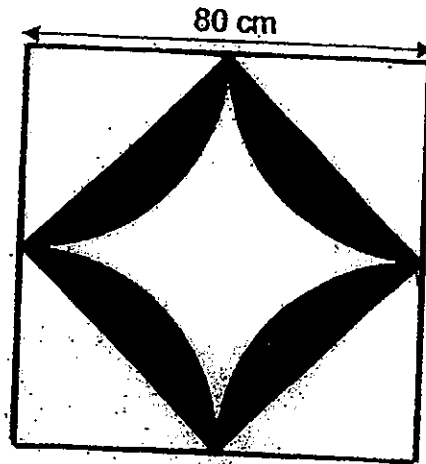
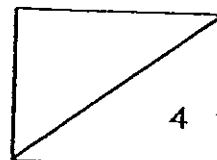


Figure 2

Ans: _____ [4]



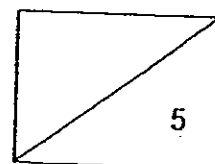
16 A shopkeeper sold twice as many spoons as pots in a day and collected \$87 in total. A pot cost \$11.50 more than a spoon and he collected \$63 more from the sale of the pots.

(a) How much did he collect from the sale of the pots?

(b) How many pots did he sell on that day?

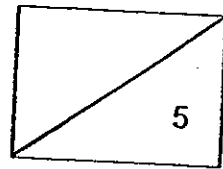
Ans: (a) _____ [2]

(b) _____ [3]



17 Devi and Ernest had some money in the ratio of 3 : 4. After Devi and Ernest received an additional amount of \$1 750 and \$460 respectively, the ratio became 2 : 1. How much did they have in total in the end?

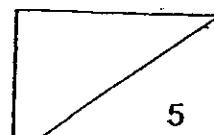
Ans: _____ [5]



- 18 There were 112 fewer red apples than green apples in a basket. Ken sold $\frac{1}{4}$ of the red apples and $\frac{3}{8}$ of the green apples. The number of green apples left was twice as many as the number of red apples left. How many apples were there in the basket at first?

Ans: _____ [5]

END OF PAPER 2





Red Swastika School
2012 Preliminary Examination
Primary 6, Mathematics
Paper 1, Booklet A & B

1)	4	4)	2	7)	3	10)	1	13)	1
2)	1	5)	2	8)	4	11)	2	14)	3
3)	1	6)	3	9)	4	12)	2	15)	3

16) 59 17) $2 \times \frac{1}{4} \times \frac{22}{7} \times \frac{7}{1} = \underline{77 \text{ cm}^2}$

18) $2 \times 2 \times 2 = \underline{8 \text{ cm}^3}$

19) $180^\circ - 93^\circ = 87^\circ$ $87^\circ \div 3 = 29^\circ$

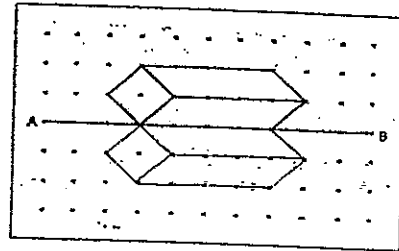
$\angle \text{DBA} = 29^\circ \times 2 = \underline{58^\circ}$

20) 8 21) $12 + 14 + 4 + 8 = 38$

$\frac{1}{4} \times 36 = \underline{9}$

22) $\frac{120}{360} = \frac{1}{3}$ $\frac{1}{3} \times 100\% = 33 \frac{1}{3}\%$

23)



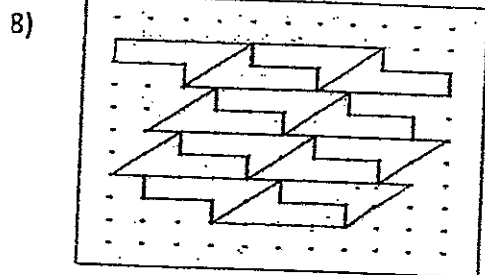
24) $3 \times 2 = 6$ $14 - 6 = 8$ $8 \div 2 = \underline{4 \text{ km}}$

25) $\frac{300 \text{ km}}{(60 + 40) \text{ km/h}} = 3 \text{ hr}$

$9:45 \text{ am} + 3 \text{ hrs} = \underline{12:45 \text{ pm}}$

6) $1800 \div 2 = 900$ $900 \times 5 \div 2 = \underline{2250}$

27) 50%



) $180^\circ - 110^\circ = 70^\circ$ $180^\circ - 90^\circ - 45^\circ = 45^\circ$
 $70^\circ - 45^\circ = \underline{25^\circ}$

) $43 + 77 = 120$ $120 \div 2 = 60$
 $(60 + y) \times 3 = \underline{180 + 3y}$

Paper 2

l) Noel = $12 + 12 + 12 + 12 = \$48$

Delise = $48 + 12 = \$60$

!) $1 - \frac{2}{5} = \frac{3}{5}$ $\frac{5}{6} \times \frac{3}{5} = \frac{1}{2}$
 $\frac{10}{10} = 8 \times 10 = \80

$\frac{3}{5} - \frac{1}{2} = \frac{1}{10}$ $\frac{1}{10} = 8$

) Area of square = $2 \times 8 = 16\text{cm}^2$
 Area of unshaded area = $104 \div 2 = 52\text{cm}^2$

$120 - 16 = 104\text{cm}^2$
 Area of shaded area = $120 - 52 = \underline{68\text{cm}^2}$

) $(180^\circ - 60^\circ - 90^\circ) \div 2 = 15^\circ$

$\angle AEB = 60^\circ - 15^\circ - 15^\circ = \underline{30^\circ}$

10% = girls

m : w

1 : 1

y : y

g : b

1 : 5

10% : 50%

$(100\% - 10\% - 50\%) \div 2 = 20\%$

20% = y

$60\% \div 20\% = 3$

$3 \times y = \underline{3y}$

$10 \times 0.5 = 5$

$5 \div 1 = 5$

$65 - 5 = 60$

$60 \div 3 = 20$

\$1 coins at first = $20 \times 2 = \underline{40}$

$60 \div 3 = 20$

$20 \times 4 = 80$

$120 - 80 = 40$

$40 \div 4 = 10$

Cards Sharon had = $10 \times 5 = \underline{50}$

$539 - 314 = 225$

$225 \div 3 = 75$

$75 \times 4 = 300$

$300 - 135 = 165$

Passengers on board cruise ship = $165 \times 2 = \underline{330}$

m : c

8 : 7

$8 \times 2 + 7 \times 4 = 44$

Cars in carpark = $3 \times 7 = \underline{21}$

$132 \div 44 = 3$

A : T : S

(2 : 5) x2

(10 : 13)

4 : 10 : 13

b) 10 units = 610

1 unit = $610 \div 10 = 61$

Simon = $13 \times 61 = \$793$

Alvin = $4 \times 61 = \$244$

$244 \div 10 = 24.4$

Dave = $24.4 \times 5 = \$122$

Difference = $793 - 122 = \underline{\$671}$

Shaded : Unshaded

5 : 8

$5 \div 4 = 9$

Big Semicircle = 9 units

Small Semicircle = 4 units

$\sqrt{9} = 3$

$\sqrt{4} = 2$

Ratio = 2 : 3

$$12a) \frac{15 + 9 + 6}{10 + 15 + 9 + 6} \times 100\% = \underline{75\%}$$

$$12b) 10 \times 1 + 15 \times 2 + 9 \times 3 + 6 \times 4 = 91$$

$$\text{Average no.} = 91 \div (10 + 15 + 9 + 6) = \underline{2}$$

$$13) 180^\circ - 86^\circ = 94^\circ$$

$$47 + 86 = 133^\circ$$

$$180^\circ - 94^\circ = 86^\circ$$

$$(180^\circ - 86^\circ) \div 2 = 47^\circ$$

$$\angle \text{OPT} = (180 - 133) \div 2 = \underline{23.5^\circ}$$

$$14) \text{Capacity of container} = 120 \times 14 = 1680\text{ml} = \underline{1.68\text{litres}}$$

$$15) \text{Area of } O = 3.14 \times (40 \times 40) = 5024\text{cm}^2$$

$$\text{Unshaded figure 1} = (5024 - 1600)\text{cm}^2 = 3424\text{cm}^2$$

$$\text{Area of 4 triangles} = 4 \times \frac{1}{2} (40 \times 40) = 1600\text{cm}^2$$

$$40 \times 40 = 1600$$

$$344 \times 4 = 1376\text{cm}^2$$

$$\frac{1}{2} \times 3.14 \times 40 \times 40 = 1256\text{cm}^2$$

$$1376 + 3424 = 4800\text{cm}^2$$

$$1600 - 1256 = 344\text{cm}^2$$

$$\text{Diff.} = 4800 - 3424 = \underline{1376\text{cm}^2}$$

$$16a) 87 - 63 = 24$$

$$24 \div 2 = 12$$

$$\text{\$ collected} = 12 + 63 = \underline{75}$$

$$16b) 12 \div 2 = 6$$

$$75 - 6 = 69$$

$$\text{Pots sold} = 69 \div 11.5 = \underline{6}$$

$$17) 3 \text{ units} + 1750 = 8 \text{ units} + 920$$

$$1 \text{ unit} = 830 \div 5 = 166$$

$$5 \text{ units} = 1750 - 920 = 830$$

$$\text{Total at end} = 166 \times (3+4) + 1750 + 460 = \underline{\text{\$3372}}$$

$$18) 4 \times 2 = 8$$

$$\frac{1}{4} \times 8 = 2$$

$$\text{Green apple left} = \frac{1}{4} \times 112 = 42$$

$$112 - 42 = 70$$

$$12 \text{ units} = 5 \text{ units} + 70$$

$$(12-5) \text{ units} = 70$$

$$7 \text{ units} = 70$$

$$1 \text{ unit} = 70 \div 7 = 10$$

$$\text{Apples in basket at first} = (10 \times 18 + 8) + 112 = \underline{272}$$

