Rosyth School
Preliminary Examination 2013
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 - _____

Date: 27th August 2013 Parent's Signature: _____

Total Time for Booklets A and B : 50 minutes

PAPER 1
(Booklet A)

Instructions to Pupils:

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

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet A)	20	

*** This booklet consists of 7 pages (including this cover page)**

(Go on to the next page)

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

(20 marks)

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1. Express $3\frac{3}{4}$ as an improper fraction.

   (1) $\frac{9}{4}$

   (2) $\frac{13}{4}$

   (3) $\frac{15}{4}$

   (4) $\frac{33}{4}$

2. Which of the following is the smallest?

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

   (2) $\frac{3}{5}$

   (3) 0.606

   (4) 0.66

3. The value of $3 + 4 \times 6 - (6 \times 2) \div 3$ is _____.

   (1) 5

   (2) 10

   (3) 23

   (4) 38

(Go on to the next page)

4. Express 5.6% as a decimal.

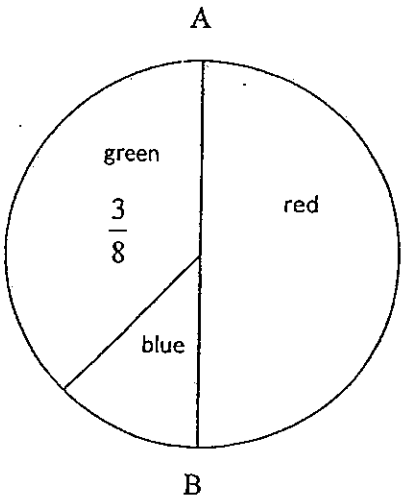
(1) 0.056

(2) 5.6

(3) 56

(4) 560

5. The pie chart shows the proportion of blue, red and green files a shopkeeper has. AB is a straight line. If he has 45 green files, how many red files does he have?



(1) 15

(2) 18

(3) 60

(4) 120

6. A machine can print 120 pages in 4 minutes. At this rate, how long will it take to print 12 000 pages?

(1) 10 min

(2) 40 min

(3) 100 min

(4) 400 min

(Go on to the next page)

7. How many $\frac{1}{4}$ h are there in $3\frac{1}{2}$ h?

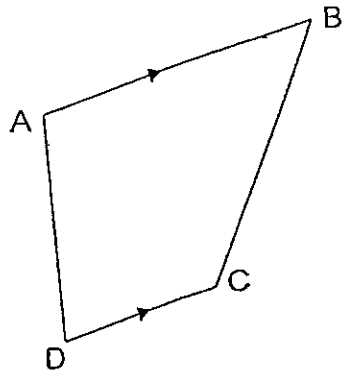
(1) 6

(2) 7

(3) 13

(4) 14

8. ABCD is a trapezium. AB is parallel to DC.
Which one of the following statements is true?



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

(2) $\angle DAB + \angle ADC = 180°$

(3) $\angle DAB + \angle ABC = 180°$

(4) $\angle DAB = \angle DCB$

9. Sandy and Ben saved a total of \$y. Sandy saved \$5 less than Ben. How much did Sandy save?

(1) $\$(y-5)$

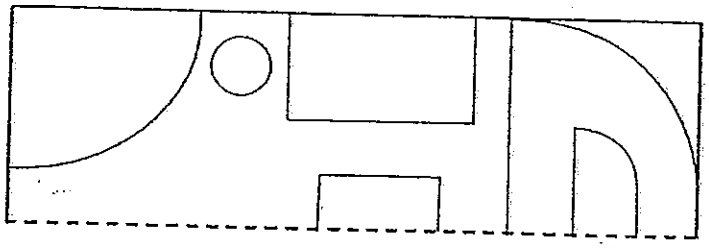
(2) $\$(y+5)$

(3) $\$(\frac{y-5}{2})$

(4) $\$(\frac{y+5}{2})$

(Go on to the next page)

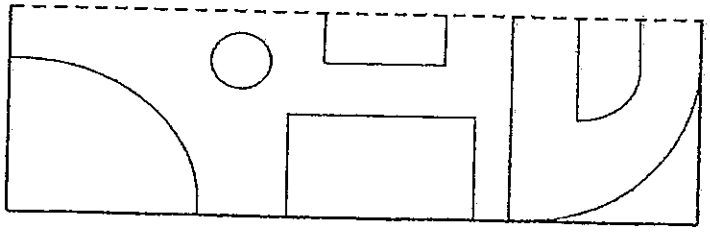
10.



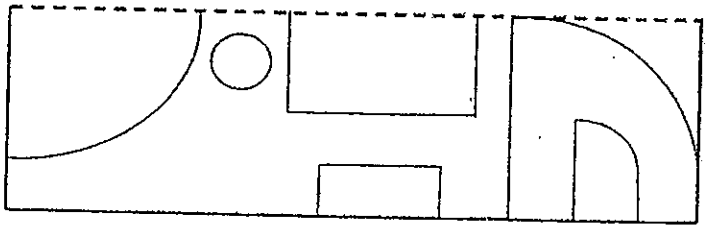
The top half of a symmetric figure is shown above.

Which one of the following completes the symmetric figure?

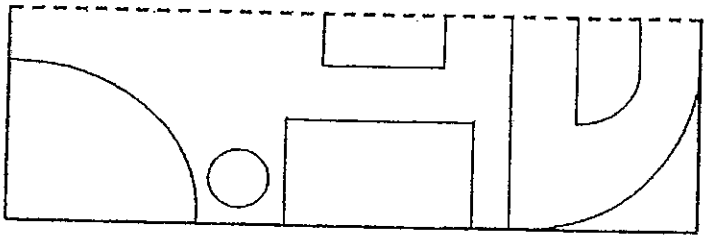
(1)



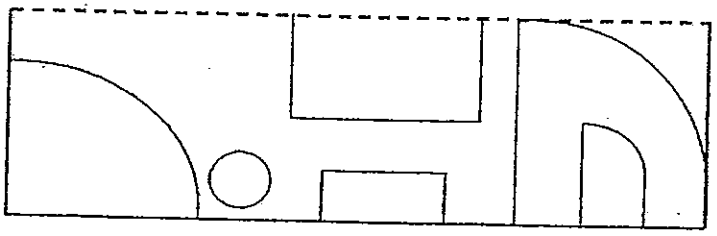
(2)



(3)



(4)



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11. Mrs Tan had 15 kg of flour. She packed the flour equally into bags, each weighing $\frac{4}{5}$ kg. How much flour was left unpacked ?

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

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

(3) $\frac{1}{5}$ kg

(4) $\frac{3}{5}$ kg

12. James and Bond left Town X at the same time. James drove at 60 km/h while Bond drove at 90 km/h. How long would it take for Bond to be 90 km ahead of James?

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

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

(3) 1 hour

(4) 3 hours

13. Ali is x years older than Hassan. Four years later, Hassan's age is half of Ali's age. How old is Ali now? Express your answer in terms of x.

(1) $(2x - 4)$ years

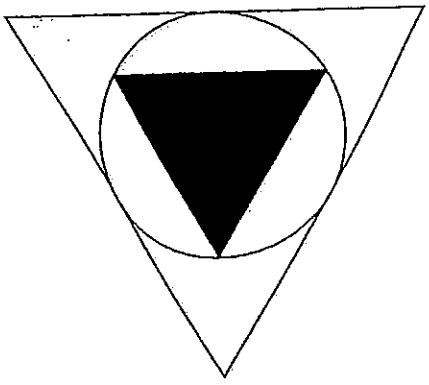
(2) $(2x - 8)$ years

(3) $(2x + 4)$ years

(4) $(2x + 8)$ years

(Go on to the next page)

14. In the figure, the circle touches each of the two equilateral triangles at exactly three points. What fraction of the figure is shaded?



(1) $\frac{1}{2}$

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

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

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

15. The ratio of the number of boys to the number of girls in a Math club was 5 : 7. When 24 boys left, the membership was decreased to $\frac{3}{4}$ of its original enrolment. How many boys were there at first?

(1) 16

(2) 32

(3) 40

(4) 72

Rosyth School
Preliminary Examination 2013
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 _____

Date: 27th August 2013 Parent's Signature: _____

Total Time for Booklets A and B : 50 minutes

PAPER 1
(Booklet B)

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. You are **not** allowed to use a calculator
4. Answer all questions.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet B)	20	

* This booklet consists of 7 pages (including this cover page)

(Go on to the next page)

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. Evaluate $2\frac{1}{2} - 1\frac{2}{3} + 3\frac{4}{5}$. Express your answer in the simplest form.

Ans: _____

17. The ratio of Anna's age to Bridgitte's age is 3 : 4. The ratio of Bridgitte's age to Carmen's age is 5 : 8. Express Anna's age as a ratio of the total age of the girls in its simplest form.

Ans: _____

18. What fraction of 80 minutes is 2 hours? Express your answer in the simplest form.

Ans: _____

19. How many halves are there in 15?

Ans: _____

(Go on to the next page)

20. What is $\frac{3}{5}$ of 4 metres? (Express your answer in the simplest form.)

Ans: _____ m

21. Find the perimeter of a quadrant which has a radius of 14 cm. (Take $\pi = \frac{22}{7}$)

Ans: _____ cm

22. Mrs Chan bought 3 ℓ of lime juice and used up $\frac{1}{4}\ell$. How much of the lime juice was left? Give your answer in millimetres.

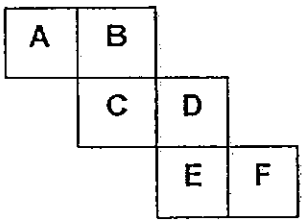
Ans: _____ ml

23. Find the volume of a cube which has a total surface area of 96 cm^2.

Ans: _____ cm^3

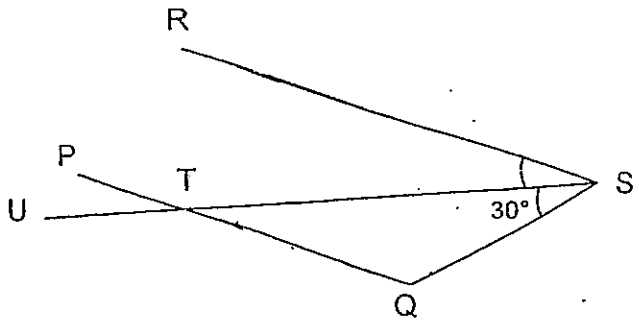
(Go on to the next page)

24. Look at the net of the cube below. What is the letter opposite of B?



Ans: _____

25. In the figure below (not drawn to scale), UTS is a straight line.
PQ is parallel to RS and QT = QS. Given that ∠ TSQ = 30°, find ∠ RST.



Ans: _____ °

(Go on to the next page)

Questions **26** to **30** carry 2 marks each. Show your workings 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)

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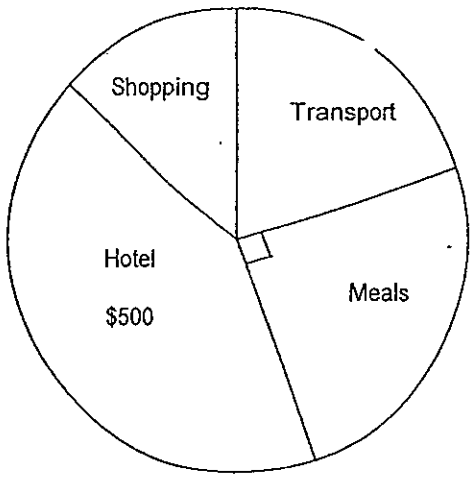
26. What is the maximum number of books Megan can purchase with $150?

Storybooks on Sale!
3 books for $40 OR 1 book for $14.50

Ans: _____

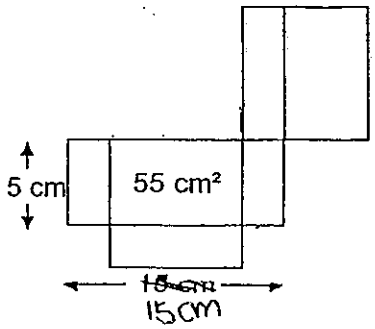
27. The pie chart below shows how Christopher spent his money during a holiday. He spent a total of $1 200. He spent 50% more on transport than on shopping. How much did he spend on shopping?



Ans: $_____

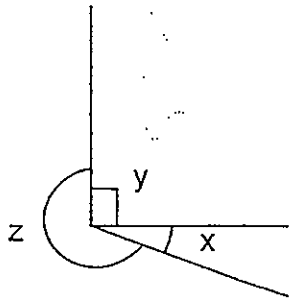
(Go on to the next page)

28. The net of a cuboid is shown below. The base has an area of 55 cm^2.
Find the volume of the cuboid.



Ans: _____ cm^3

29. The figure below is not drawn to scale. The ratio of $\angle x$ to $\angle y$ to $\angle z$ is 2 : 3 : 7.
Find the difference between $\angle x$ and $\angle z$.

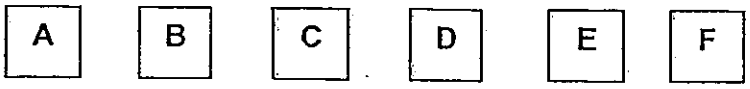


TMP

Ans: _____

(Go on to the next page)

30. The diagram below shows a series of consecutive odd numbers represented by the letters A to F



A + C + E = 15y

What is the value of A? Express your answer in terms of y.

Ans: _____

End of Paper 1

Rosyth School
Preliminary Examination 2013
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 - _____

Date: 27th August 2013 Parent's Signature: _____

Time: 1 h 40 min

PAPER 2

Instructions to Pupils:

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

Questions	Maximum Mark	Marks Obtained
Q 1 to 5	10	
Q 6 to 18	50	

Section	Maximum Mark	Marks Obtained
Paper 1	40	
Paper 2	60	
Total	100	

* **This booklet consists of 17 pages (including this cover page)**

(Go on to the next page

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

(10 marks)

Do not write in this space

1. The average of 8 consecutive even numbers is 99. What is the greatest number among the 8 numbers?

Ans: _____

2. Mr Martino always saved 25% of his monthly salary. He received a pay rise of 8% and found that he could save $340 more. What was Mr Martino's salary after his pay rise?

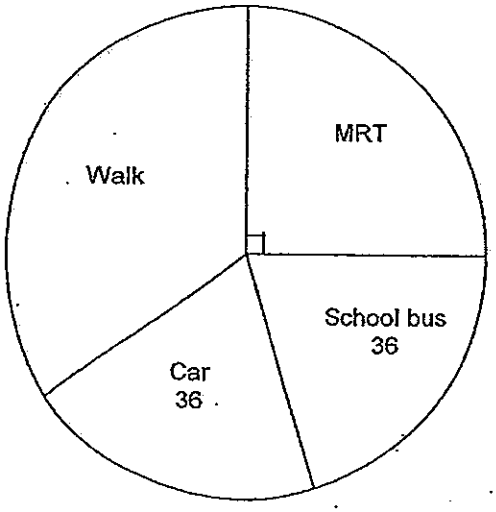
Ans: $_____

(Go on to the next page)

A survey was conducted to find out how 180 students travelled to school. The pie chart below shows the results of the survey. Refer to the pie chart below and answer Questions 3 and 4.

Do not write in this space

3.



Given that the number of students who travelled by school bus was the same as those who travelled by car, what percentage of the students walk to school ?

Ans: _____%

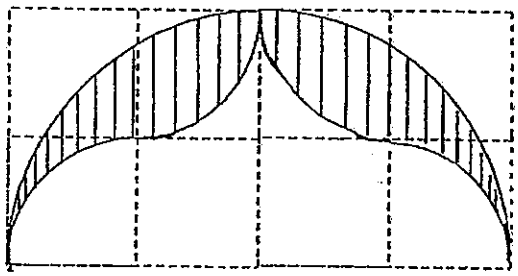
4. What was the ratio of the number of students who walk to school to the number of students who take MRT?

Ans: _____

(Go on to the next page)

5. The figure consists of a big semicircle of radius 10 cm and 4 small quadrants each of radius 5 cm. Find the perimeter of the shaded part. Leave your answer in terms of π.

Do not write in this space



5 cm

Ans: _____cm [2m]

(Go on to the next page)

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

(50 marks)

Do not write in this space

6. Ramesh had 2 buckets X and Y, each containing some water. He poured $\frac{3}{5}$ of the water from X into Y. After that, he poured $\frac{1}{2}$ of the water from Y into X. The ratio of the amount of water in X to the amount of water in Y became 11 : 5. What was the ratio of the amount of water in X to the amount of water in Y at first?

Ans: _____ [3m]

(Go on to the next page)

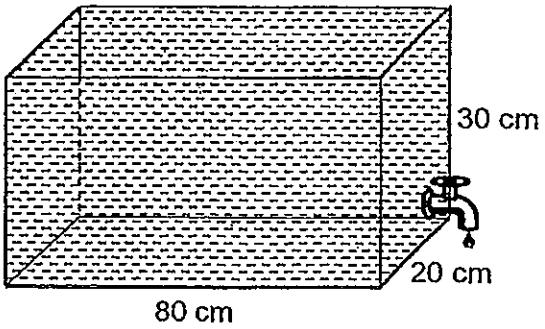
Do not write in this space

7. Tank A which measures 80 cm by 20 cm by 30 cm was completely filled with water while Tank B was empty. The base area of Tank B is $\frac{1}{2}$ the base area of Tank A.

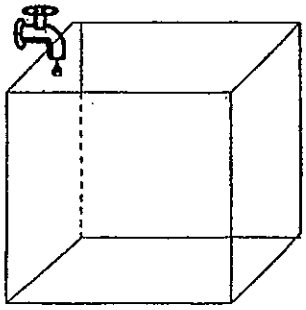
Both tanks have the same height .

Water is drained from Tank A at the same rate as the water is being filled in Tank B, at 800 cm^3 per minute. How long would it take for the height of the water level in both tanks to be the same?

Tank A



Tank B



Ans: _____ [3m]

8. The graph below illustrates the survey findings of the weekly pocket money of a Primary 6 class.

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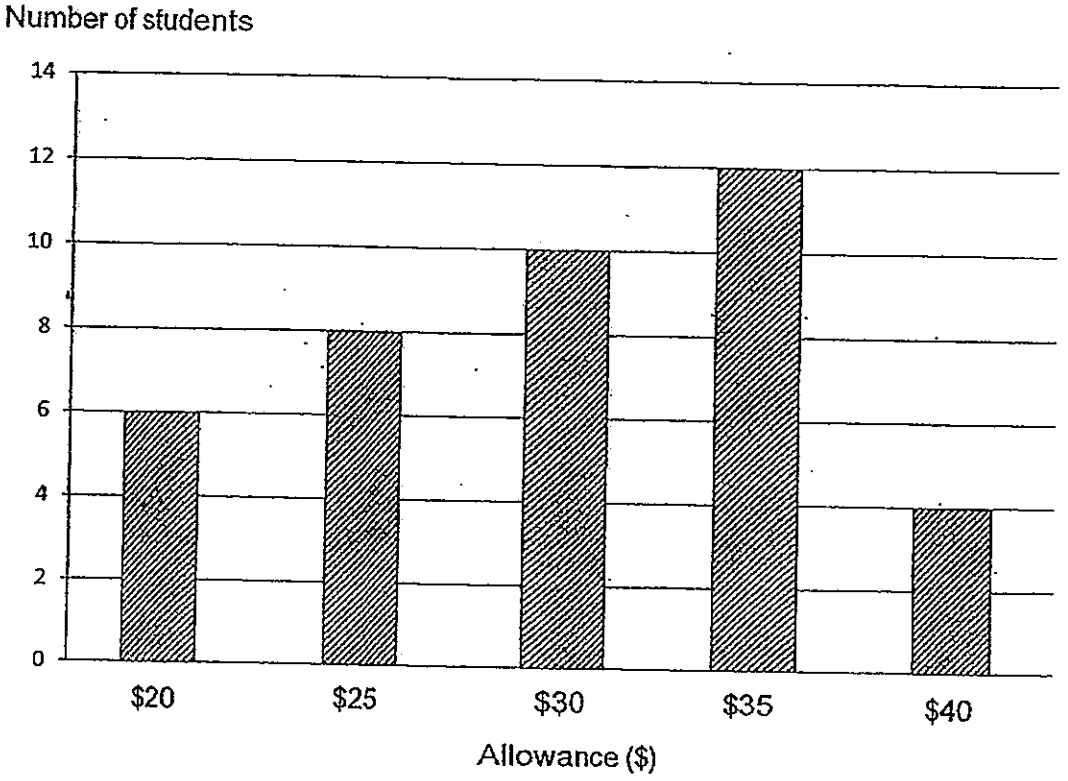


(a) Find the number of students in the class.

(b) Calculate the percentage of students whose allowance is $30 or more.

Ans: (a) _____ [1m]

(b) _____ [2m]

(Go on to the next page)

9. A car travelled 18 km with 2 litres of petrol. If the petrol cost $1.50 per litre, how far could the car travel on a full tank of petrol which cost $84?

Do not write in this space

Ans: _____ [3m]

(Go on to the next page)

10. At a party, there was an equal number of boys and girls. $\frac{1}{3}$ of the boys and 18 girls left the party. In the end, there were 42 children remaining behind. How many pupils were there at the party at first?

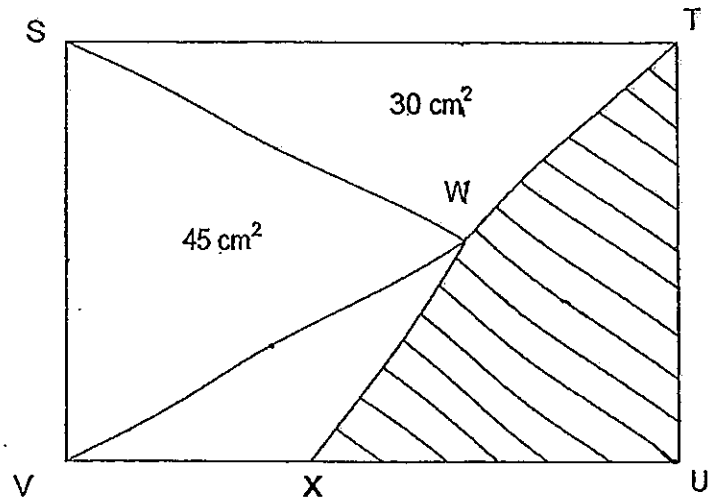
Do not write in this space

Ans: _____ [3m]

(Go on to the next page)

11. The diagram below shows a rectangle STUV. Area of triangle STW is 30 cm^2 and the area of triangle SWV is 45 cm^2. Given that SW = V W and the ratio of the length of VX to the length of XU is 2 : 3, find the area of TUXW.

Do not write in this space

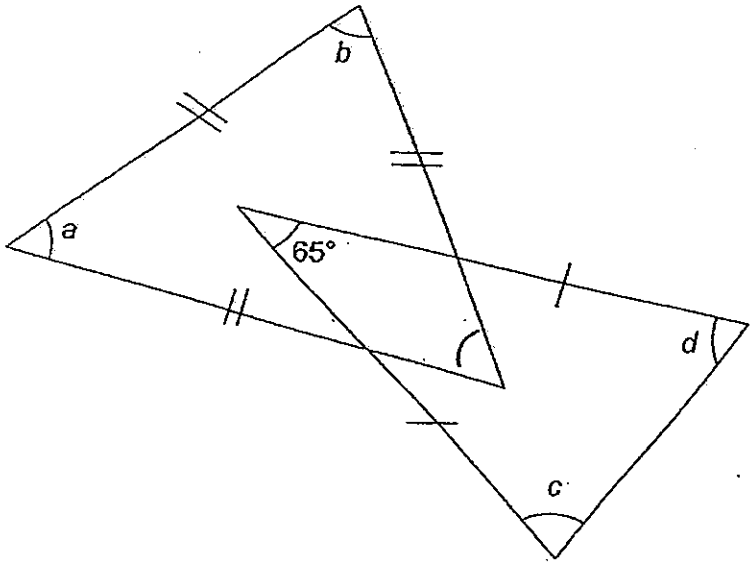


Ans: _____ [4m]

(Go on to the next page)

12. In the figure, find the sum of $\angle a$, $\angle b$, $\angle c$ and $\angle d$.

Do not write in this space



Answer :_____ [3]

(Go on to the next page)

13. Mark had some red and white stickers. The number of red stickers was twice the number of white ~~marbles~~ stickers. After he gave away 89 red stickers and 20 white stickers, $\frac{1}{5}$ of the stickers left was red. Find the total number of stickers Mark had at first.

Do not write in this space

Ans: _____ [4m]

(Go on to the next page)

14. The diagram below shows 3 identical semicircles with an area of 24 cm^2.
Smaller semicircles are found in each semicircle.
In Figure 1, each of the 2 semicircles is identical.
In Figure 2, each of the 3 semicircles is identical.
In Figure 3, each of the 4 semicircles is identical.

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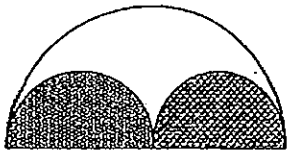


Figure 1

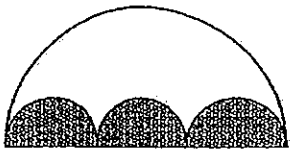


Figure 2

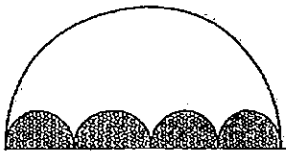


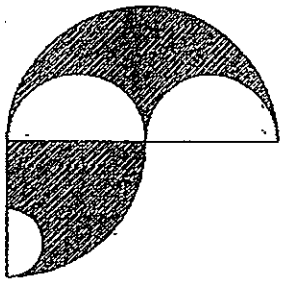
Figure 3

Fill in the information in the table below to help you analyze the pattern.

a)

Figure	Ratio of shaded region to unshaded region	Area of shaded region	Area of unshaded region	Total area
1	1 : 1	12 cm^2		24 cm^2
2	1 : 2	8 cm^2		24 cm^2
3	1 : 3	_____ [1m]	_____ [1m]	24 cm^2

b) The semicircles were rearranged to form the figure below.
With the above observation, find the shaded area of the following figure.



Ans: _____ [3m]

(Go on to the next page)

15. 20% of Jack's stamps is equal to 30% of Vindra's stamps. 25% of Jack's stamps is equal to 35% of Vindra's and Kumar's stamps. Given that Jack and Kumar had a total of $242, how many stamps did Vindra have?

Do not write in this space

Ans: _____[5m]

(Go on to the next page)

16. A cardboard box (Figure 1) measuring 102 cm by 33 cm by 65 cm has been opened up to form its net (not drawn to scale) as shown in Figure 2.

Figure 1

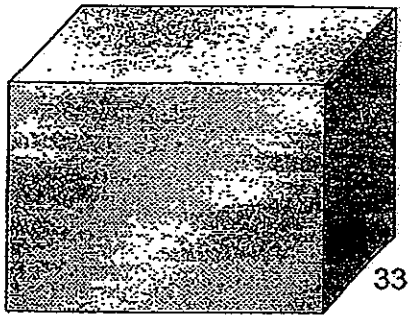
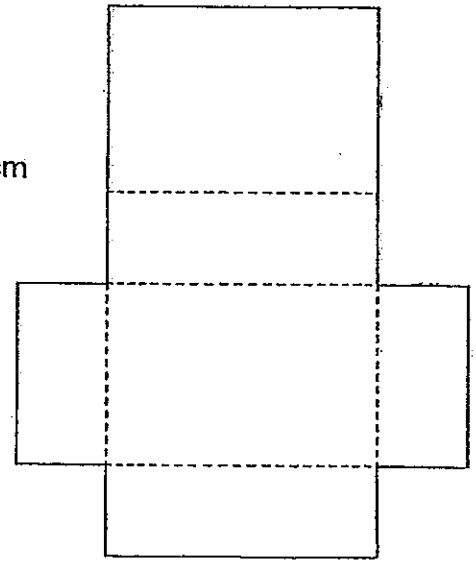


Figure 2



Helen then cut along the folded lines to get 6 rectangular pieces of cardboard. Next, she cut 10 cm squares from each of the 6 pieces of cardboard. What is the maximum number of pieces of squares that she can get?

Ans: _____ [4m]

Do not write in this space

(Go on to the next page)

17. There were 252 chocolates to be divided into three groups A, B and C. A certain number of chocolates was selected from group A and distributed to groups B and C such that the number of chocolates in each of these two groups was doubled. Then, some chocolates were removed from group B and distributed to groups A and C, such that the number of chocolates in each of these two groups was also doubled. After that, the selection and distribution of chocolates continued from group C to group A and B. At the end, the number of chocolates in group B was twice of A while the number of chocolates in group A was twice of C. Find the number of chocolates in the largest group of chocolates at first.

Do not write in this space

Ans: _____ [5m]

(Go on to the next page)

18. At 9.30 a.m., Larry left Town X for Town Y which is 540 km apart. At 11.30 a.m., Fred started from Town Y towards Town X. They passed each other at 1.30 p.m., after Larry drove 50 km passed the midpoint of Town X and Town Y.

(a) Find the speed of Fred.

(b) At what time would Fred arrive at Town X if he continued the rest of his journey at the speed of 80 km/h?

Do not write in this space

Ans: (a) _____ [3m]

(b) _____ [2m]

End of Paper

Answer Key

EXAM PAPER 2013

SCHOOL : ROSYTH PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : MATHEMATICS
TERM : SA2

Booklet A

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

16. $4\frac{19}{30}$
17. 15:67
18. $1\frac{1}{2}$
19. 30
20. 2.4m
21. 50cm
22. 2750ml
23. 64
24. E
25. 30°
26. 11 books
27. $160
28. $100cm^3$
29. 150°
30. 5y-4

Paper 2

1. (99-1) = 98
   (99+1) = 100
   100+2+2+2 = 106
2. 25% --- saved
   108% -- after increased
   25% x 108% = 27%

27% - 25% = 2%
2% --- 340
108% -- 18360

3. 180 x ¼ = 45
180-36-36-45 = 63
63/180 x 100% = 35%

4. 63: 45
7:5

5. Pie x 10 = 10pie
½ x pie x 20 = 10 pie
10pie + 10pie = 20 pie

6.
X : Y
11: 5

X : Y
6 : 10

X : Y
15: 1

7. Vol of water = 80x20x30=48000
80x20+80x20x ½ = 2400
Height = 48000÷2400 = 20

A --- 1 min 800 ÷1600 = 0.5
B --- 1 min 800÷800 = 1
20cm --- 20 mins

8. A. 6+8+10+12+4=40
B. 10+12+4=26
26÷40 x 100 = 65%

9. 2 L --- 18km
1L --- 9km
1L -- $1.50
84÷1.50=56
56L --- 56 x9 = 504km

10. 5u --- 42+18 = 60
1u --- 12
6u --- 72

11. 30+30 = 45+ WTU
WTU = 15
5u --- 30

3u --- 18
18+15 = 33

12. 180-65=115
180÷3x2=120
120+115=235

13. 2u – 89 = 1p
1u – 20 = 4p

8u – 356 = 4p
7u --- 336
1u --- 48
3u --- 144

14. A. 1. 12
2. 16
3. 6 / 18
b. 6÷4=1.5
9+1.5=10.5
10.5+12=22.5

15. 20% J = 30% V
1/5 J = 3/10 V
3/15 J = 3/10 V
J : V
15: 10
3 : 2

25% J = 35% K + V
¼ J = 7/20 V + K
7/28 J = 7/20 V + K
J : V+K
28: 20

J: V : K
21:14:1

22u---- 242
1u ---- 11
14u --- 154

16. 102÷10 = 10R2
33÷10 = 3R3
65÷10 = 6R5

10x3x2+10x6x2+3x6x2=216

17. A:B:C:T
2:4:1:7

7u --- 252
1u --- 36
2u --- 72
4u --- 144
A : B : C
72:144:36

36:72:144

18:162:72

135:81:36

Ans: 135

18. A. 540÷2 = 270
270+50=320
540-320=220
220 ÷2 = 110km/h

B. 320÷80=4hr
4hr +2hr = 6hr
11:30 + 6hr = 5:30pm