Rosyth School
Preliminary Examination 2014
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 -_____

Date: 19 August 2014 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 10 pages (including this cover 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)

All diagrams in this paper are not drawn to scale.

1. How many thousands are there in a million?

   (1) 100
   (2) 1 000
   (3) 10 000
   (4) 100 000

2. Which of the following shows the numeral 5 in the hundredths place?

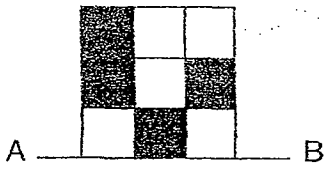
   (1) 0.01543
   (2) 0.1543
   (3) 1.543
   (4) 1 543

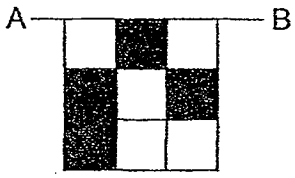
3. $\boxed{?} \div 10 = 0.123 \times 100$

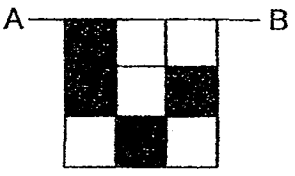
   What is the missing number in the box?

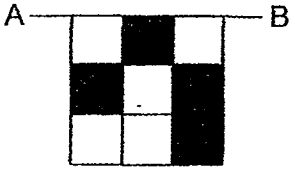
   (1) 1.23
   (2) 12.3
   (3) 123
   (4) 1 230

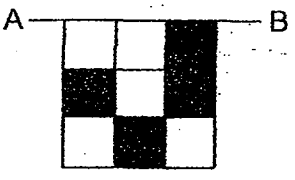
4. The top half of a symmetric figure is shown below. AB is the line of symmetry. Which one of the following completes the symmetric figure?



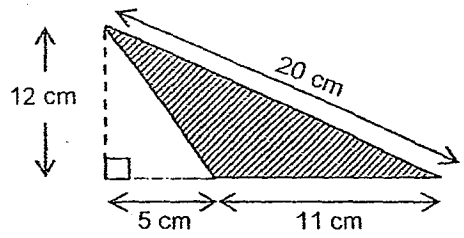
(1) 

(2) 

(3) 

(4) 

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



(1) 30 cm^2

(2) 66 cm^2

(3) 110 cm^2

(4) 120 cm^2

6. Matthias drove from his house to his work place at a speed of 84 km/h. He took 15 minutes to get there. How far was his work place from his house?

(1) 12.6 km

(2) 21 km

(3) 210 km

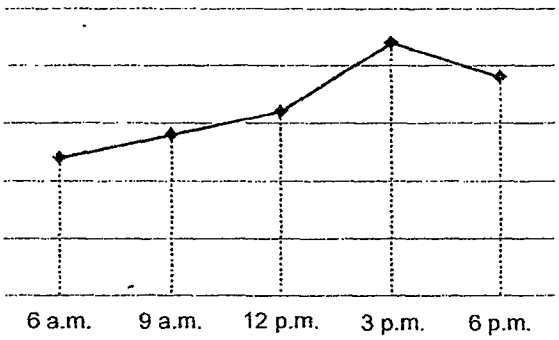
(4) 1 260 km

7. The table below shows the temperature at various times on a certain day.

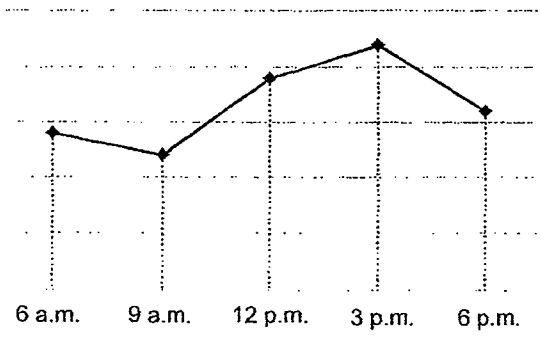
Time	6 a.m.	9 a.m.	12 p.m.	3 p.m.	6 p.m.
Temperature	12	19	16	22	14

A graph with a missing temperature scale is drawn. Which of the following could be the graph that shows the information given in the table?

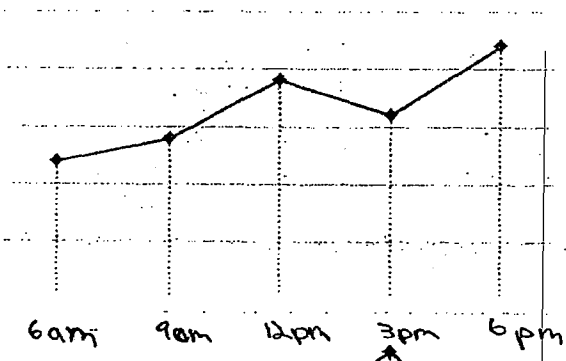
(1)



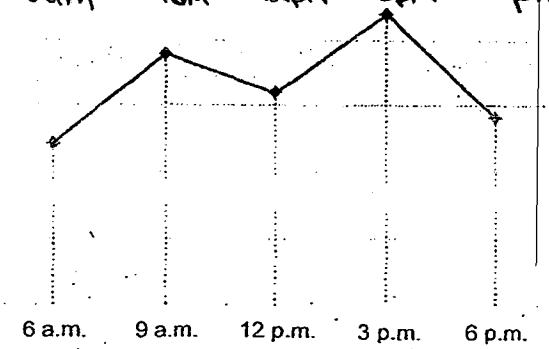
(2)



(3)



(4)



8. Christel mixed 700 g of soya beans, 270g of red beans and 0.03 kg of green beans together. How much mixed beans were there altogether?

(1) 970.03 g

(2) 973 g

(3) 1 000 g

(4) 1 270 g

9. The calendar below shows the month of November in 2014.
Leena crossed out 4 November. She will be travelling to Iceland 57 days later from the date she crossed out. Which day will she be travelling?
(There are 30 Days in November)

November						
Mon	Tue	Wed	Thur	Fri	Sat	Sun
					1	2
3	~~4~~	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

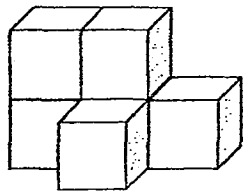
(1) Monday

(2) Wednesday

(3) Thursday

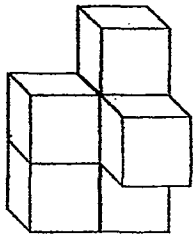
(4) Sunday

10. The solid below is made up of 6 identical cubes which has been glued together.

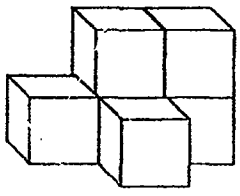


Which of these is the solid above after it is rotated?

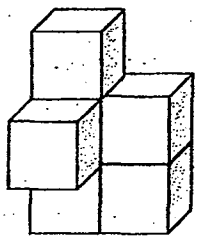
(1)



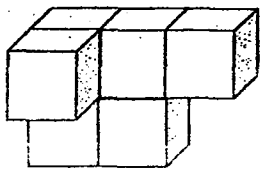
(2)



(3)



(4)



11. Rebecca bought a cake and ate $\frac{1}{5}$ of the cake. She then gave away $\frac{1}{3}$ of the remainder to her sister. What fraction of the cake was left?

(1) $\frac{1}{15}$

(2) $\frac{2}{15}$

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

(4) $\frac{8}{15}$

12. 40% of the pupils who attended a concert are boys. Halfway through the concert, 10% of the girls and 25% of the boys left the concert. What percentage of the pupils remained at the concert?

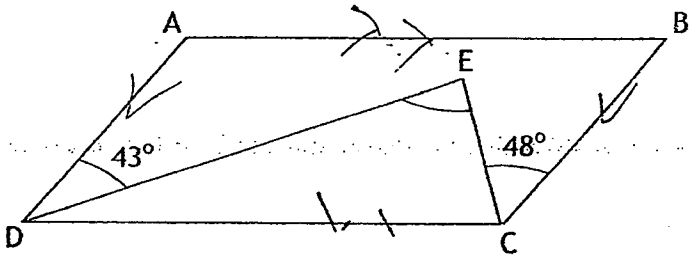
(1) 16%

(2) 35%

(3) 65%

(4) 84%

13. The figure shows a parallelogram ABCD and a triangle CDE. Find $\angle CED$.



(1) 43°

(2) 89°

(3) 91°

(4) 101°

14. In a biathlon race, athletes need to swim 1 km and run 15 km.
Catherine and Betty took part in the biathalon.

For the swimming event, Catherine completed the swim in 28 mins and Betty took 9 mins longer than Catherine.
For the running event, Betty ran at 7.5 km/h and Catherine was 8 mins faster than Betty.

Which of the table below best describes Catherine and Betty's timing for the Biathalon?

(1)

	Swim	**Run**
Catherine	28 mins	128 mins
Betty	37 mins	120 mins

(2)

	Swim	**Run**
Catherine	28 mins	112 mins
Betty	37 mins	120 mins

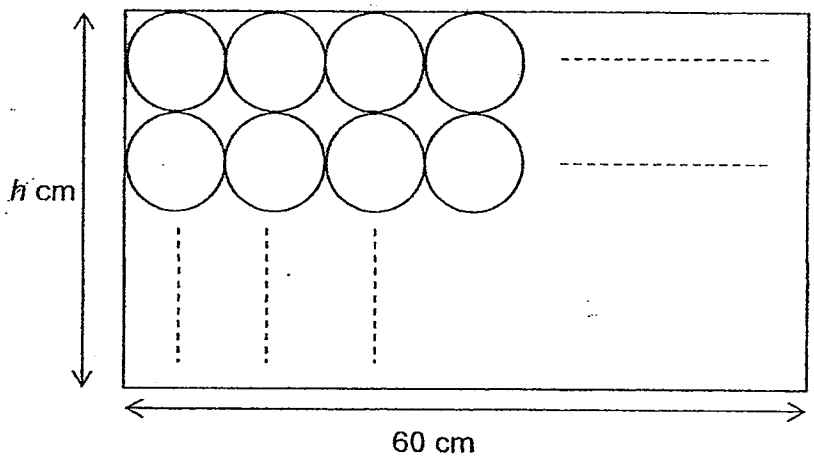
(3)

	Swim	**Run**
Catherine	28 mins	128 mins
Betty	19 mins	120 mins

(4)

	Swim	**Run**
Catherine	28 mins	112 mins
Betty	19 mins	120 mins

15. Jeremy had cut some identical circles of radius 2 cm from a rectangular cardboard measuring 60 cm by h cm as shown below. What was the maximum number of circles he cut?
Give your answer in terms of h in the simplest form.



(1) 3.75h

(2) 7.5h

(3) 15h

(4) 30h

Go on to Booklet B

Rosyth School
Preliminary Examination 2014
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 -_____

Date: 19 August 2014 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)**

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.
All diagrams in this paper are not drawn to scale.

(10 marks)

16. $7 - 0.011 =$ _____

Ans: _____

17. Find $1 \div \frac{3}{5}$. Give your answer as a fraction in its simplest form.

Ans: _____

18. Find the value of 50×0.18.

Ans: _____

19. 12 : 8 is the same as 15 : ☐

What is the missing number in the box?

Ans: _____

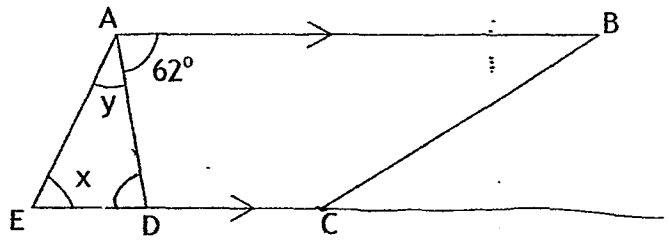
20. How many 5-cent coins are there in $11.05?

Ans: _____

21. Shi Yao took a flight from Singapore and arrived at Beijing at 1.15 p.m. The duration of the flight is 6 hours and 35 minutes. At what time did she depart Singapore?

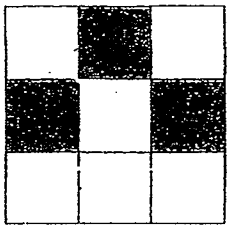
Ans: _____ a.m ~~p.m.~~

22. The figure shown below is made up of a triangle AED and a trapezium ABCD. CDE is a straight line. Find the sum of $\angle x$ and $\angle y$.



Ans: _____

23. The big square below is made up of 9 identical small squares. The total area of the unshaded parts is 24 cm^2. Find the length of the big square.



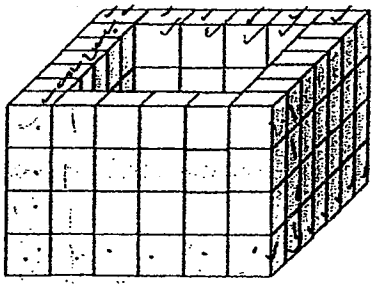
Ans: _____ cm

24. Arrange the following fractions from the smallest to the largest.

$\frac{4}{5}$, $\frac{5}{6}$, $\frac{9}{11}$, $\frac{11}{13}$

Ans: _____

25. The figure above shows a cuboid made up of identical cubes. There is a hole all the way through the cuboid. How many cubes would be needed to fill the hole in the cuboid completely?

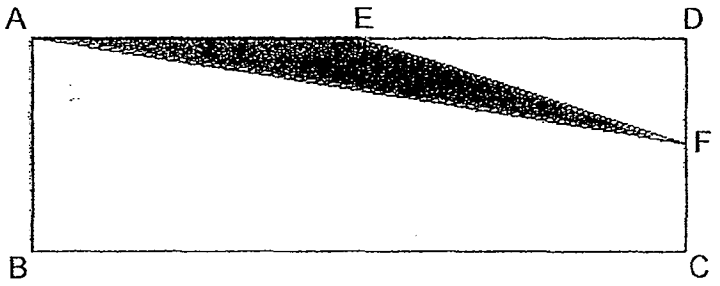


Ans: _____

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)

26. ABCD is a rectangle. E is the midpoint of AD and F is the midpoint of CD. The ratio of the length of the rectangle to the breadth of the rectangle is 3 : 2. What fraction of the rectangle is shaded?

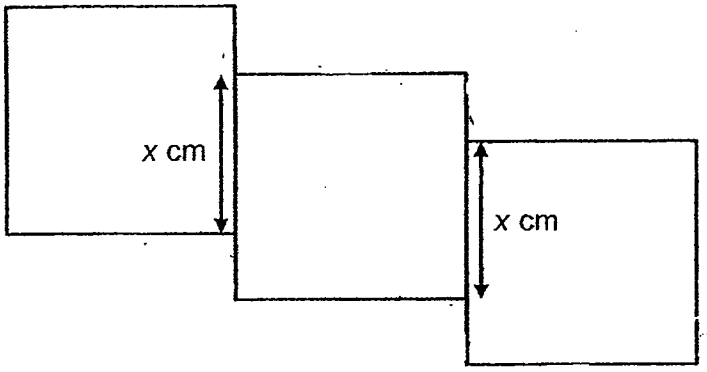


Ans: _____

27. A cubical tank of length 20 cm is completely filled with water. All the water was transferred from the cubical tank into a rectangular container with a square base of 250 cm^2. What was the water level in the rectangular container?

Ans: _____ cm

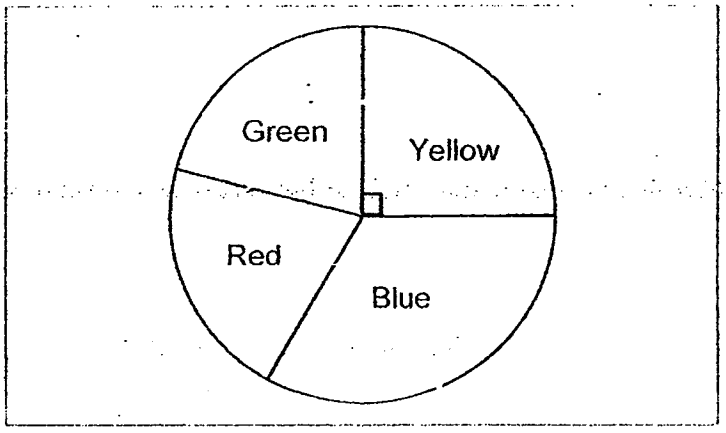
28. The diagram below is made up of three identical squares, each with side measuring 5 cm. Find the perimeter of the whole figure.
Give your answer in terms of x in the simplest form.



Ans: _____ cm

29. The pie chart shows the favourite colours of a group of students
$\frac{1}{3}$ of the pupils like blue and an equal number of pupils like green and red. The rest of the pupils like yellow. 25 of the pupils like green, how many pupils were there?

Favourite Colours of Students

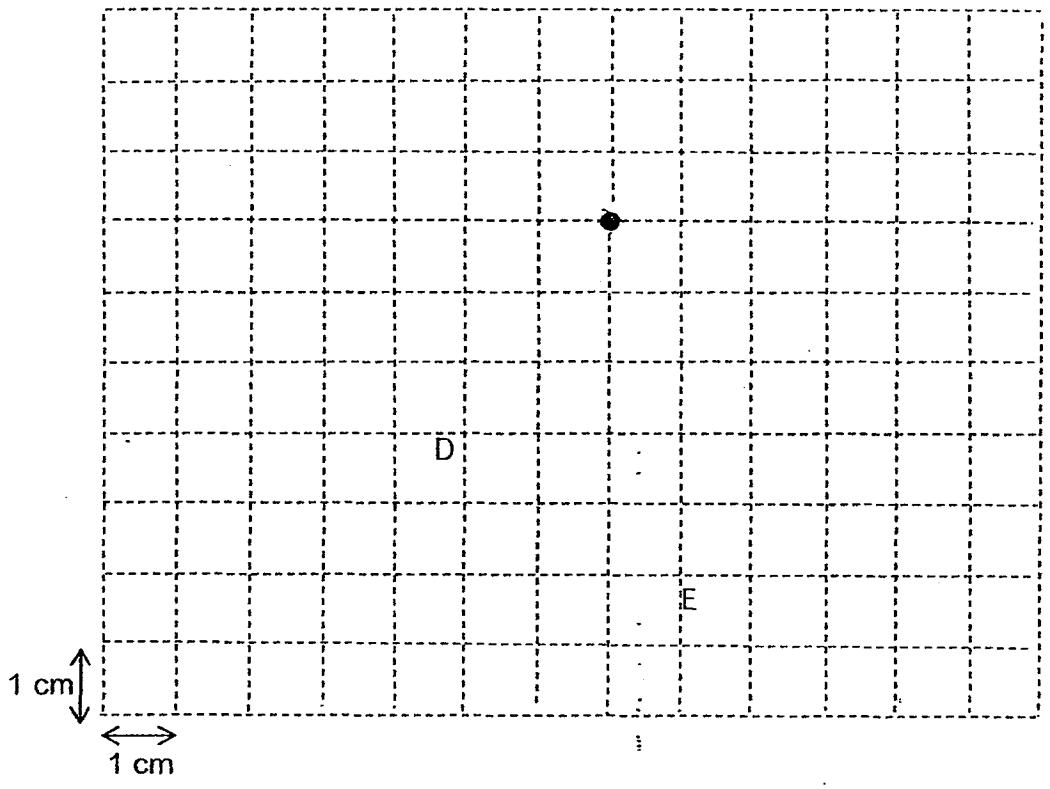


Ans: _____

30. The square grid below is made up of 1 cm squares. Construct the trapezium DEFG such that:

(i) DE is parallel to FG,
(ii) FE is perpendicular to DE and
(iii) FG is twice the length of DE and passes through point X.

Line DE is drawn for you. Label all the points.



End of paper. Have you checked your work?

Rosyth School
Preliminary Examination 2014
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 - _____

Date: 19 August 2014 Parent's Signature: _____

Time: 1h 40mins

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)

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

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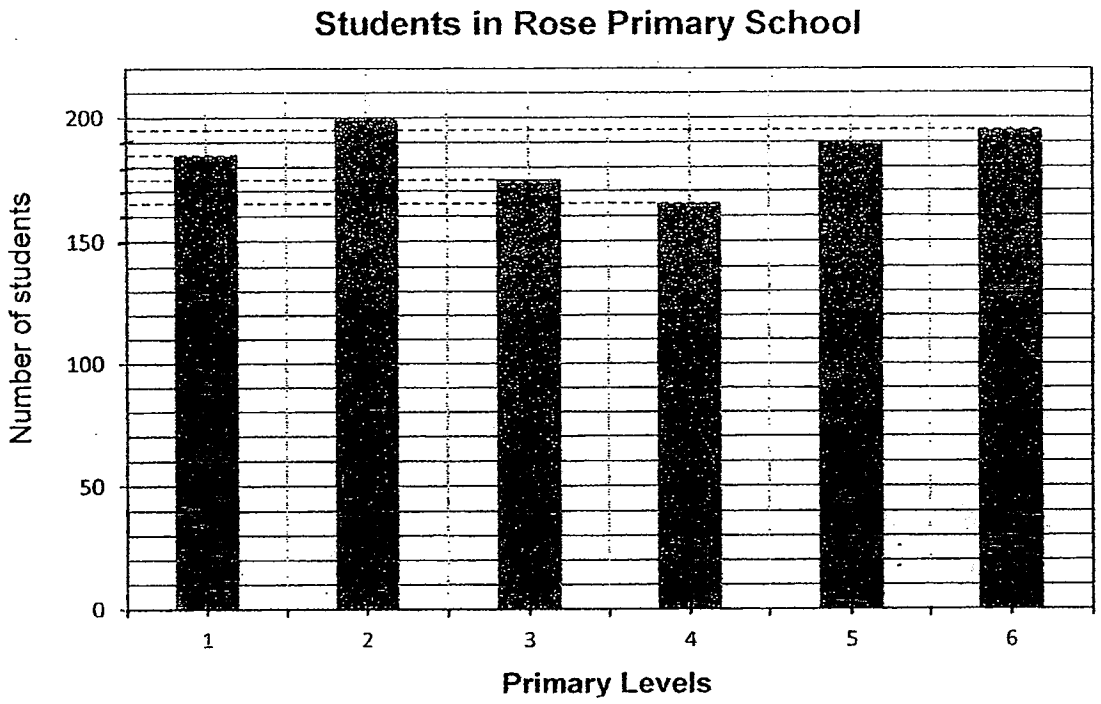
1. The graph shows the number of students at each level in Rose Primary School.



Find the total number of pupils in Rose Primary School.

Ans: _____

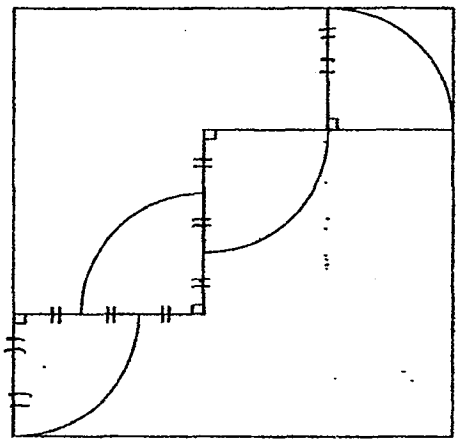
2. Eunice and Iris have some green pens and some blue pens. The number of blue pens Eunice has is equal to the number of green pens Iris has.

$\frac{2}{5}$ of Eunice's pens are green and $\frac{2}{7}$ of Iris's pens are blue. There is a total of 100 green pens. Find the total number of pens they have.

Do not write in this space

3. Four identical quarter circles were cut out from a square cardboard of length 14 cm.

Find the area of the 4 quarter circles. Leave your answer in terms of π



Ans: _____ cm^2

4. Denise bought $\frac{3}{4}$ kg of sugar. She used $\frac{1}{3}$ kg of the sugar to bake a cake and used $\frac{1}{5}$ of the remainder to bake a donut. How much sugar had she left? Give your answer in kilograms.

Do not write in this space

Ans: _____ kg

5. The ratio of the number of boys to the number of girls in a class is 1 : 3. The ratio of the pupils in the class who take swimming lessons to those who do not take swimming lessons is 7 : 3. The ratio of the boys who take swimming lessons to those who do not take swimming lessons is 4 : 1. What is the ratio of the girls who take swimming lessons to the girls who do not take swimming lessons?

Ans: _____

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

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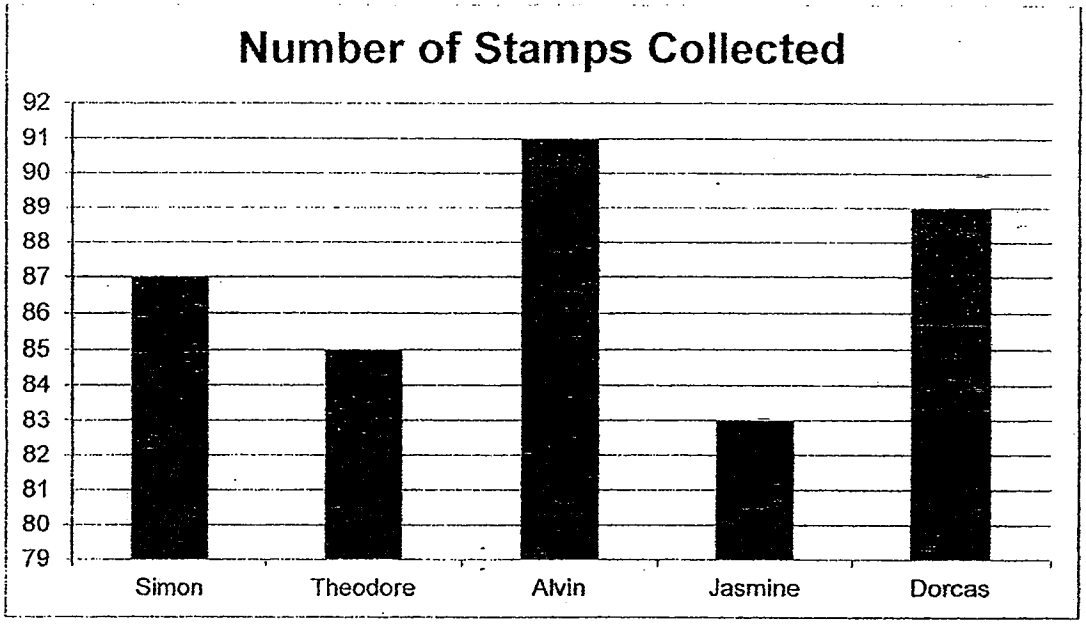
6. The bar graph below shows the number of stamps collected by 5 members of a local stamp club in the month of October.



a) Find the average number of stamps the members collected in the month of October.

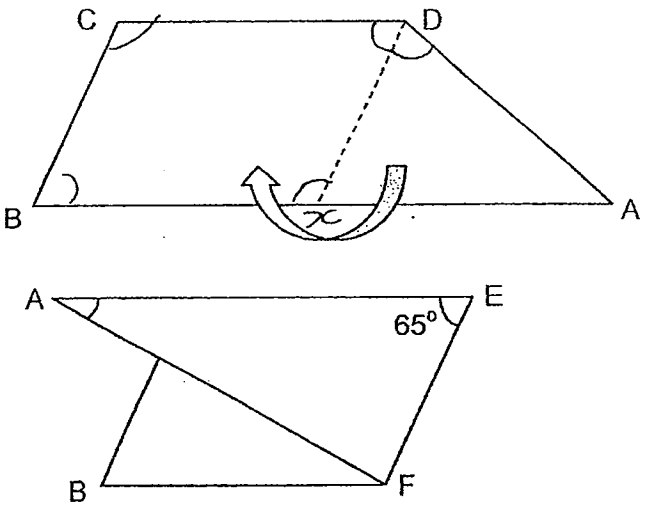
b) The total number of stamps collected by the 5 members in November is the same as in October. However, a new member joined the stamp club and the average number of stamps collected by each member became 89. How many stamps did the new member collect in November?

Ans (a): _____ [1m]

(b) _____ [2m]

Do not write in this space

7. The figure shown below, a trapezium ABCD was folded as shown. AB is parallel to CD. AE is parallel to BF. $\angle AEF = 65^{\circ}$. Find $\angle FAE$.



Ans: _____ [3m]

8. Faith has 2 tanks, A and B of different capacities. If tank A is filled by a tap at a rate of 3 litres per minute and tank B is filled by a tap at a rate of 5 litres per minute, when tank A is completely filled, 5 litres of water flowed out from tank B.

If tank A is filled by a tap at a rate of 4 litres per minute and tank B is filled by a tap at a rate of 3 litres per minute, when tank A is completely filled, tank B is only half-filled. What is the capacity of tank B?

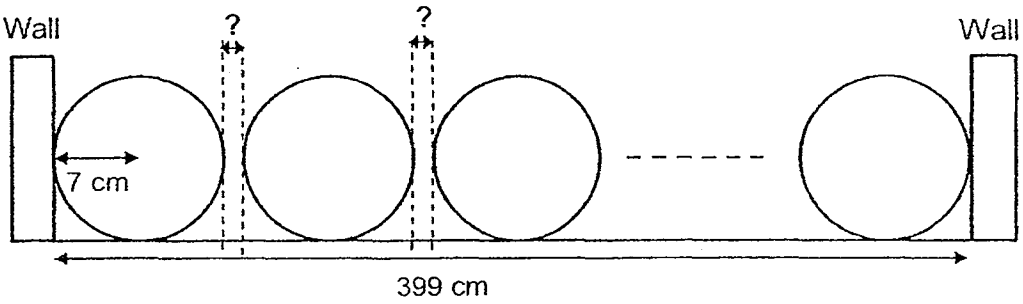
Ans: _____ [3m]

9. Arthur and Eunike started off from the same place at 10 am towards Plaza Senayan. When Eunike had completed $\frac{4}{5}$ of the distance, Arthur had only completed $\frac{2}{3}$ of the distance to Plaza Senanyan. Eunike's average speed was 12 km/h faster than Arthur's. What was Arthur's speed?

Do not write in this space

Ans: _____ [3m]

10. In the diagram shown below, 23 identical toy wheels were placed between two walls with equally spaced gaps between them. The first toy wheel and the last toy wheel were touching the front wall and last wall respectively. Given that the distance between the two walls was 399 cm and that the radius of a toy wheel was 7 cm, find the length of the gap between any two adjacent wheels as shown below.



Ans: _____ [3m]

Do not write in this spac

11. Four children, Angela, Belinda, Christobel and Dorothy shared $450. Angela received $\frac{1}{2}$ of the total amount of money received by Belinda, Christobel and Dorothy. Belinda received $\frac{4}{11}$ of the total amount of money received by Angela, Christobel and Dorothy. Christobel received $\frac{3}{7}$ of the total amount of money received by Angela, Belinda and Dorothy. Dorothy gave $15 to Christobel, what is the ratio of Dorothy's money to Christobel's money?

Do not write in this space

Ans: _____[3m]

12. Kiren put all his stamps into 24 large albums and 18 small albums. Each large album can hold 18 more stamps than each small album. $\frac{2}{5}$ of his stamps were put into all the small albums and the rest were put into the large albums. How many stamps can be put into one large album?

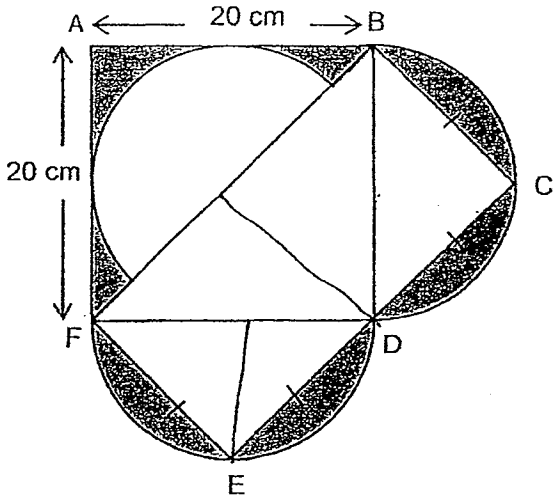
Do not write in this space

Ans: _____ [4m]

13. The figure below is made up of semicircles, a square ABDF and a rectangle BCEF. The length of the square ABDF is 20 cm.

Do not write in this space

Find the area of the shaded figure. Leave your answer in terms of π



Ans: _____ [4m]

14. The bill for a dinner for 4 friends at Sedap Restaurant is shown below. A service charge of 10% was included in the bill before a GST of 7% is added.

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Description	Quantity	Cost
Towel - $0.30	4	$1.20
Healthy Drinks - $3.70	4	$14.80
Bun - $0.80	10	$8.00
Abalone -$60	1	$60
Steam Sea Bass - $40	0.8 kg	$32
Crabs	2	?
Vegetable - $12	1	$12
Meat - $14	1	$14
Sub total		?
Service Charge 10%		?
GST 7%		?
Total Payable		$294.25

(a) How much must each of the 4 friends pay for his dinner if they share the cost equally? Round off your answer to the nearest dollar.

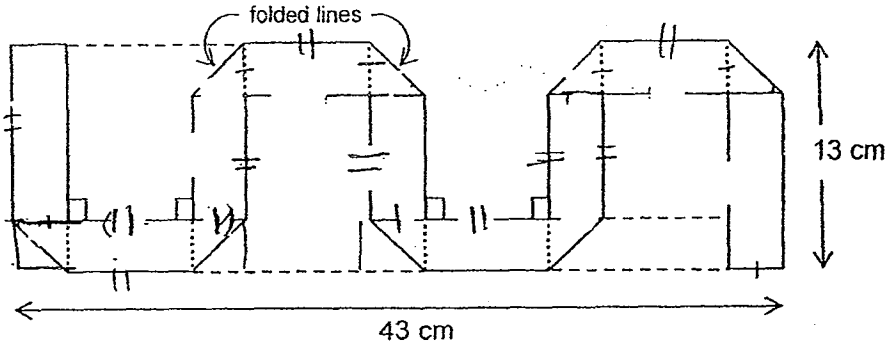
(b) The price of the crab and some of the information are missing from the bill. What was the price of the 2 crabs without the service charge and the GST?

Ans: (a) _____ [2m]

(b) _____ [3m]

15. The figure below is folded using a rectangular strip of paper. Find the length of the strip of paper.

Do not write in this space



Ans: _____ [5m]

16. Ryan bought some pears and apples in the ratio of 3 : 5 respectively. The cost of an apple was $0.50 less than the cost of a pear. He spent a total of $95 buying the pears and apples. The total cost of the apples was $5 more than the total cost of the pears. How much did each pear cost?

Do not write in this space

Ans: _____ [5m]

17. "Chatty" phone company offers mobile phone services and charges at the following rate:

Do not write in this space

	Plan A	Plan B
Monthly Subscription	$38	$52
Outgoing calls	Free for the first 100 minutes Part thereof 16.05 cents per minute	Free for the first 300 minutes Part thereof 16.05 cents per minute
Short Message Services (SMS)	Free for the first 800 SMS Charged at 5.35 cents per SMS	Free for the first 900 SMS Charged at 5.35 cents per SMS

*Total bill includes monthly subscription.

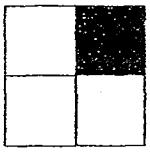
(a) In February, Jane made 180 minutes of outgoing calls and sent a total of 1000 SMS. How much was her total bill if she had subscribed to Plan A?

(b) How much would she have saved in February if she had subscribed to Plan B?

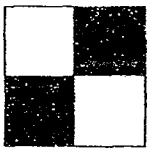
Ans: (a)_____ [2m]

(b)_____ [3m]

18. Two types of square-shaped tiles, tile 1 and tile 2 are available to make a larger pattern on the floor. The pattern of each square-shaped tile is shown below.



tile 1



tile 2

Tile 1 is made up of 3 white squares and 1 black square.

Tile 2 is made up of 2 white squares and 2 black squares.

Figure 1 shows a floor laid with Tile 1 and Tile 2 in a repeated pattern.

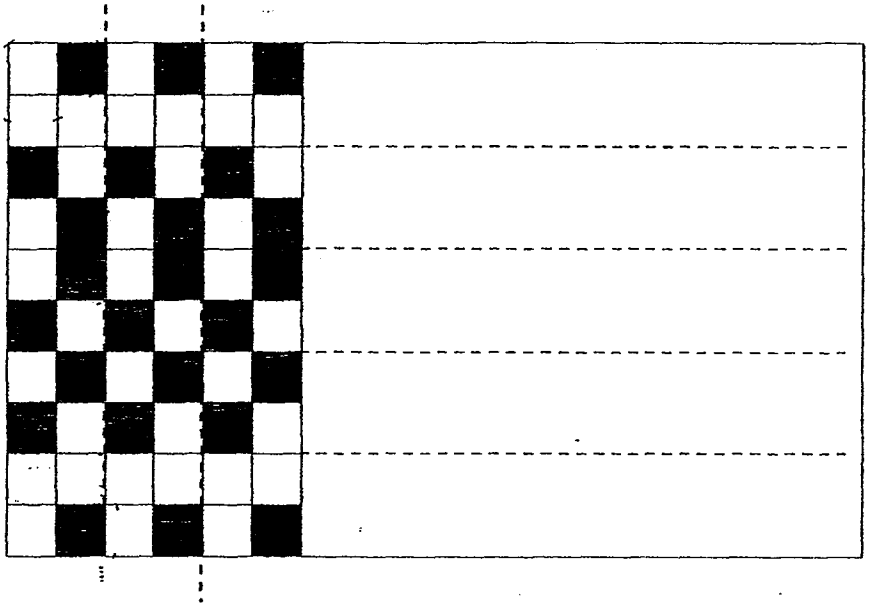


Figure 1

(a) 90 pieces of Tile 1 were used to cover part of the floor in the room in the pattern shown in figure 1. Find the total number of tiles needed to tile the floor in figure 1. (Only complete tiles were used)

(b) What percentage of the floor in figure 1 was covered with black squares?

* Show your working clearly and write down the answer on page 17

EXAM PAPERS 2014

SCHOOL: ROSYTH SCHOOL
SUBJECT: MATHEMATICS
LEVEL: PRIMARY 6
TERM: PRELIMINARY EXAM

PAPER 1 (BOOKLET A)

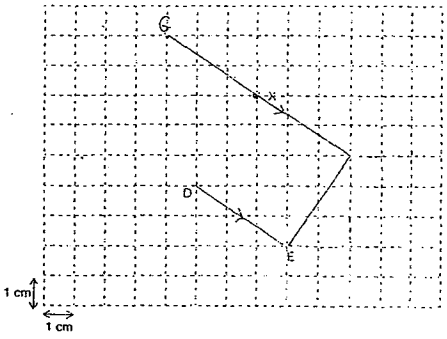
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
2	2	3	1	2	2	4	3	2	1	4	4	3	2	1

PAPER 1 (BOOKLET B)

Q16 6.99
Q17 1⅔
Q18 9
Q19 10
Q20 221
Q21 6.40
Q22 118
Q23 6
Q24 ⅘, 9/11,⅝,11/13
Q25 80
Q26 Assume 1u→6
3u→6x3=18
2u→6x2=12
rect→216cm²
18/2=9cm
AE→9cm
DF→12/2=6cm
½x6x9=27cm²
27/216=⅛
Ans: 1/8
Q27 water→20x20x20=8000cm³
water level→8000÷250=32cm
Ans:32cm
Q28 8x5=40cm
4y
y=5-x
4y→20-4x
40+20-4x=60-4x
Ans: (60-4x)cm
Q29 G=R
G+R→1-⅓-¼=12/12-4/12-3/12
=5/12

G=5/12÷2
=5/12x½
=5/24
5/24→25
1/24→25÷5=5
24/24→5x24=120
Ans:120

Q30



PAPER 2

Q1 185+200+175+165+190+195=1110
There were 1110 pupils in Rose Primary School.

Q2

Eunice	Iris
B : G	B : G
3u:2u	1.2u:3u
5u→100	2/7l:5/7l

3u+2u+1.2u+3u→100/5x9.2=184
They have 184 pens.

Q3 1 quad radius/2=1u
14cm→7u
1u→14/7=2cm
1 quad radius→2cmx2=4cm
4 quarter=1 circle
πr^2
$\pi x4x4=16\pi$
The area of the 4 quarter circles was $(16\pi)cm^2$.

Q4 5/5-⅕=⅘
⅘(¾kg-⅓kg)=4/12kg
=⅓kg
She had ⅓kg of sugar left.

Q5 boys:girls
1 :3
x2.5
2.5u : 7.5u

swim (7u-2u)=5u
don't swim(7.5u-5u=2.5u)

Girls

swim : don't swim

5 : 2.5

1 : 2

The ratio was 2:1.

Q6 a) 87+85+91+83+89/5=87

The members collected an average of 87 stamps.

b) 6(89)-435=99

The new member collected 99 stamps.

Q7 ∠XDA→65°

∠CDX→65°

∠DXB→180°-65°=115°

∠DAX=∠FAE→115°-65°=50°

∠FAE was 50°

Q8 A :B

2 : 3

A→3ℓx x

B→4.5ℓX x=5ℓx X-5ℓ

0.5ℓxX=5ℓ

x→10

5ℓx10-5ℓ=45ℓ

Tank B was 45ℓ.

Q9 In 1h, E travels 12km/h more than A.

⅘-⅔=2/15distance

2/15distance→12km

15/15 distance→12km/2x15=90km

⅔x90km=72km

A→72km/h-12km/h=60km/h

Arthur's speed was 60km/h.

Q10 23x(7x2)=322cm

399-322/23-1=3.5cm

The gap was 3.5cm.

Q11

A : B+C+D	Total
1 : 2	3

$150←450/3x1→A

B : A+C+D	Total
4 : 11	15

$120←450/15x4→B

C : A+B+D	Total
3 : 7	10

$135←450/10x3→C

D=$45

45-15=$30 (D) ←D gave to C $15
135+15=150 C
D : C
30 : 150
1 : 5
The ratio was 1:5.

Q12 extra stamps→24x18=432
L:S
24u+432:18u
18u→⅗
⅗→18/2x3=27u
27u-24u=3u=432
3u→432
1u→432/3=144
1u+18→144+18=162
162 stamps can be placed in one large album.

Q13 $(20)^2-\pi x(10)^2/2=(200-50\pi)$
$\pi(10)^2-(\frac{1}{2}x20x10)=(100\pi-200)cm^2$
$(100\pi-200)-(200-50\pi)=50\pi$
Area of the shaded figure is $50\pi cm^2$

Q14 a) $294.25÷4=$73.56≈$74
They must each pay $74.
b) 117.7%→$294.25
100%→294.25/117 x 100=$250
$250-$12-$14-$32-$60-$8-$14.80-$120=$108
The price was $108.

Q15 —|—=x
—||—=y
5x+4y=43---①
2x+1y=13---②
3x+3y=30
x+y=10----③
compare ③ and② : x=3, y=7
10x+9y=(10x3)+(7x4)=93

Q16 P : A
3u : 5u
cost of pears→95-5/2=$45
cost of apples→$95-$45=$50
3u of pears →$45
5u of apples→$50
1u of pears→10
3u→10x3=30
1 pear→$45÷30=$1.50
Each pear cost $1.50