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)

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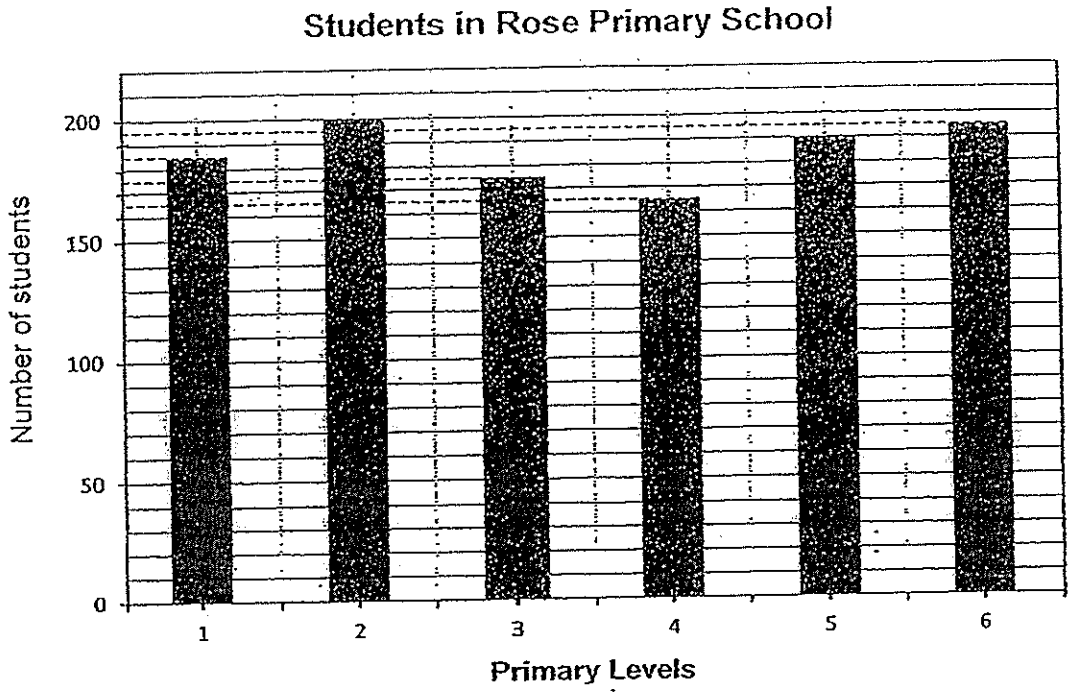
1. The graph shows the number of students at each level in Rose Primary School.



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.

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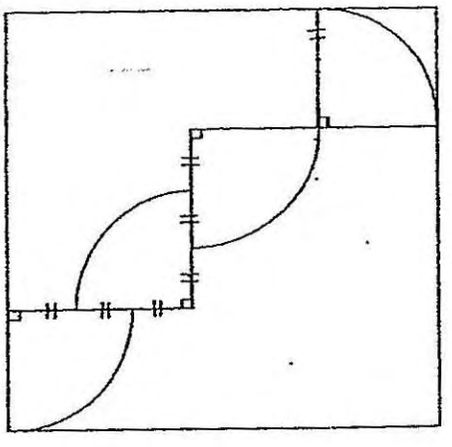
3. Four identical quarter circles were cut out from a square cardboard of length 14 cm.

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)

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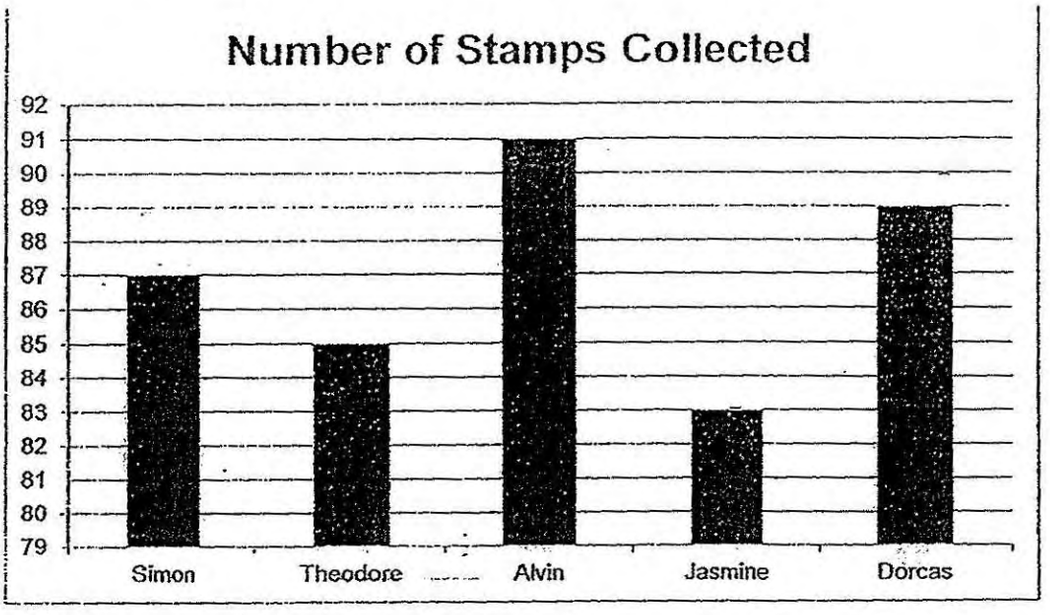
6. The bar graph below shows the number of stamps collected by 5 members of a local stamp club in the month of October.



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]

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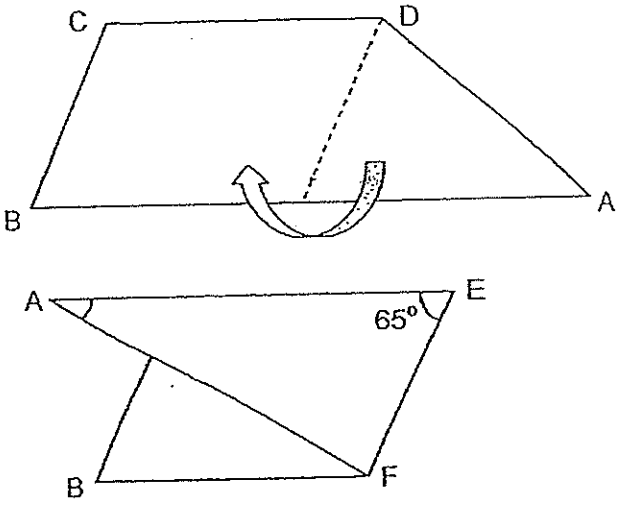
7. The figure shown below, a trapezium ABCD was folded as shown. AB is parallel to CD. AE is parallel to BF. $\angle AEF = 65°$. Find $\angle FAE$.



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]

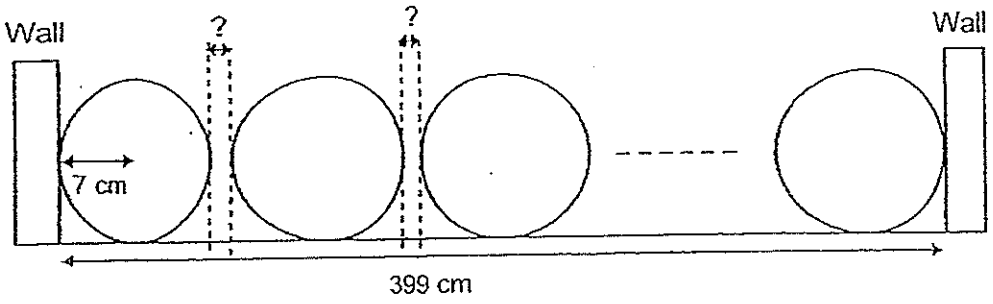
9. Arthur and Eunike started off from the same place at 10 am towards Plaza Senayan. When Eunike had completed $\frac{4}{5}$ of the distance, Arthur had only completed $\frac{2}{3}$ of the distance to Plaza Senanyan. Eunike's average speed was 12 km/h faster than Arthur's. What was Arthur's speed?

Do not write in this space

Ans: _____ [3m]

Do not write in this spac

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]

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.

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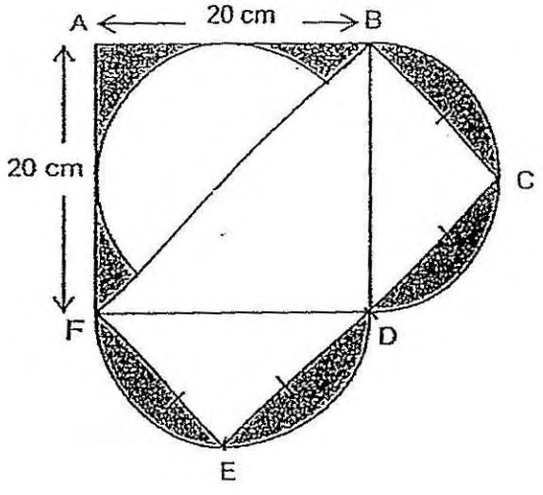
Find the area of the shaded figure. Leave your answer in terms of π



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

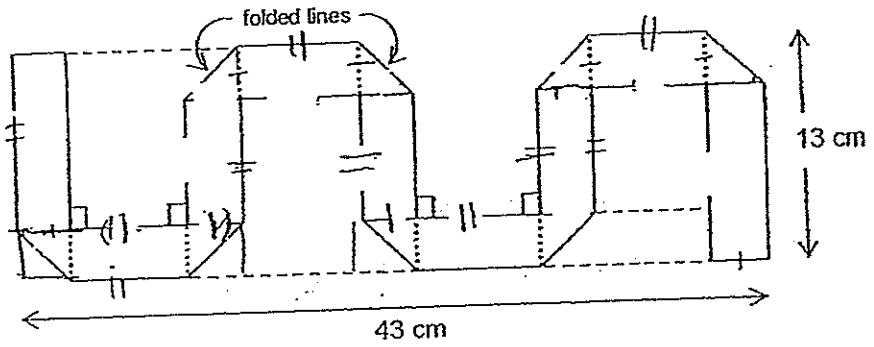
(a) How much must each of the 4 friends pay for his dinner if they share the cost equally? Round off your answer to the nearest dollar.

(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.

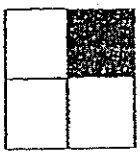
(a) In February, Jane made 180 minutes of outgoing calls and sent a total of 1000 SMS. How much was her total bill if she had subscribed to Plan A?

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

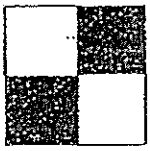
Ans: (a)_____ [2m]

(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.

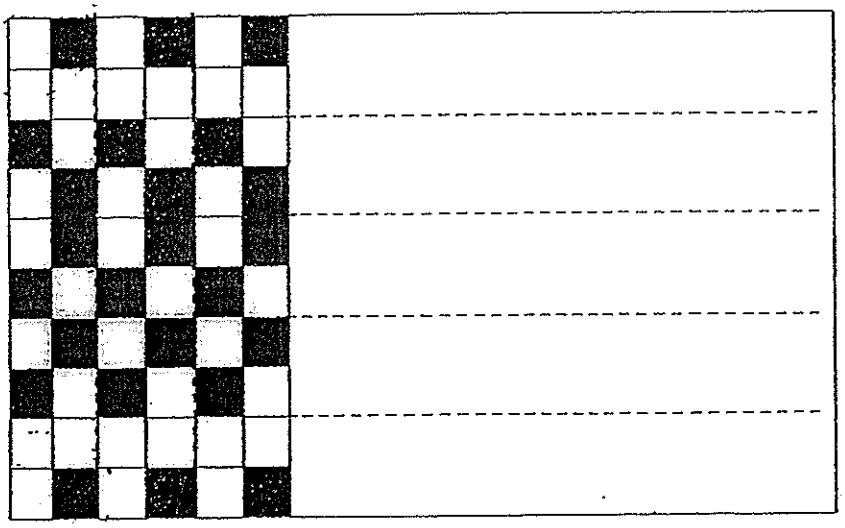


Figure 1

(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)

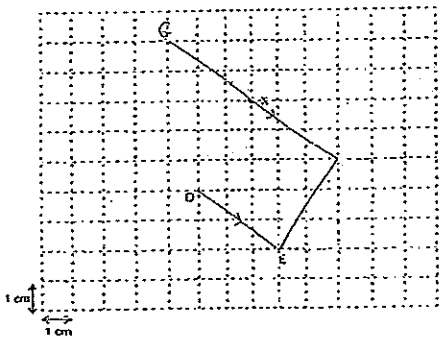
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
2	2	3	1	2	2	4	3	2	1	4	4	3	2	1

PAPER 1 (BOOKLET B)

Q16 6.99
Q17 1⅓
Q18 9
Q19 10
Q20 221
Q21 6.40
Q22 118
Q23 6
Q24 ⅘, 9/11,⅚,11/13
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 5/5-⅗=⅖
⅖(¾kg-⅗kg)=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.

⅘-⅗=2/15distance

2/15distance→12km

15/15 distance→12km/2x15=90km

⅗x90km=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 $(20)^2-\pi\times(10)^2/2=(200-50\pi)$
$\pi(10)^2-(\frac{1}{2}\times20\times10)=(100\pi-200)cm^2$
$(100\pi-200)-(200-50\pi)=50\pi$
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 $\frac{1}{x}=x$
$\frac{1}{y}=y$
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

Q17 a) (80x16.05¢)+(200x5.35¢)+3800=6154¢≈$61.54
Her total bill is $61.54
b) (16.05)+100(5.35)+5200=5735¢
6154-5735=419¢≈$4.19
She would have saved $4.19

Q18 a)1 row→2 tile1, 3 tile 2
rows→90/2=45
tiles→45x5=225
225 tiles were needed.
b) 8/4x5x100%=40%
40% of the floor in figure 1 was covered in black squares.