

REPTON SCHOOL

PRACTICE

Year 7 Entrance Examination 2

Time: 1hr 30mins

Instructions to candidates

- a) Write all of your answers on the examination paper
- b) Show all of your working
- c) Calculators are **not** permitted
- d) You will require a pen, pencil, ruler and rubber

1. Write the next three terms in the following sequences

a) 8, 11, 14, 17, ..., ..., ... (1)

b) 3, 6, 12, 24, ..., ..., ... (1)

c) 13, 11.5, 10, 8.5, ..., ..., ... (1)

d) 1, 4, 9, 16, ..., ..., ... (1)

e) 1, 2, 3, 5, 8, ..., ..., ... (1)

2. A sequence begins with the terms 8, 16, ...

Write down two different ways in which the sequence could continue and the rule you have used.

8, 16, ..., ..., ... rule: (2)

8, 16, ..., ..., ... rule: (2)

3. Work out the following, clearly showing your working

a) $5.33 + 3.72$

..... (2)

b) $17.67 - 16.41$

..... (2)

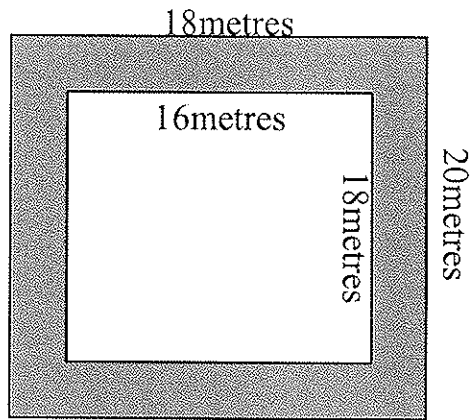
c) 217×32

..... (2)

d) $1379 \div 7$

..... (2)

4. Saif is a landscape gardener. A customer has a simple garden with a rectangle of grass surrounded by soil. Saif will need to buy the grass and soil from a supplier



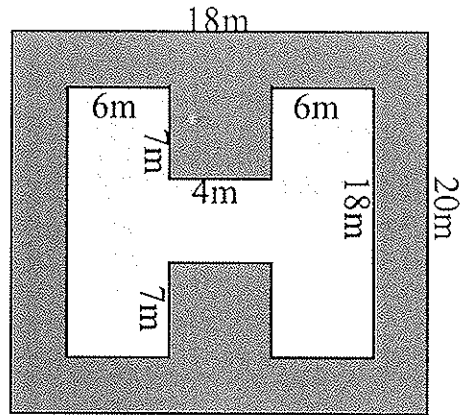
- a) What is the area of grass required?

..... m² (1)

- b) What is the area of bare soil required? Do not count the grass.

..... m² (2)

Saif has a better idea for the garden, he would like to see the following design.



- c) If he would like to put a privet fence around the **grass** of the new design, what length fence does he need to buy?

..... m (2)

- d) What area of grass would he need for the new design?

..... m² (2)

5. Complete the missing numbers below

a) $\frac{2}{18} = \frac{\boxed{}}{9}$ (1)

b) $\frac{1}{2} = \frac{2}{\boxed{}}$ (1)

c) $\frac{12}{\boxed{}} = \frac{6}{24}$ (1)

d) $\frac{1}{2}$ of 20 = $\frac{1}{3}$ of $\boxed{}$ (1)

e) $\frac{2}{6}$ of 150 = $\frac{1}{2}$ of $\boxed{}$ (1)

f) $\frac{3}{7}$ of 420 = $\frac{4}{7}$ of $\boxed{}$ (1)

g) Write down three fractions which are equivalent to $\frac{3}{4}$ (2)

.....,,

h) Which fraction is exactly half way between

$\frac{3}{5}$ and $\frac{5}{7}$? (1)

6. Here is an equation

$$4 - a = b$$

a) Write down a pair of numbers that makes this equation true

$$a = \dots\dots, b = \dots\dots (1)$$

b) Write down a **different** pair of numbers

$$a = \dots\dots, b = \dots\dots (1)$$

c) Here is an expression

$$3a + 3 + 3a$$

Which expression below shows it written as simply as possible? Put a ring around the correct one.

$$9a$$

$$9 + a$$

$$6a + 3$$

$$3a + 6$$

$$6(a + 3)$$

(1)

d) Here is a different expression

$$3b + 2 + 3b - 2$$

Write it as simply as possible

..... (2)

7. Look at this information

$$x = 5 \quad y = 29$$

Complete the rules to show different ways of getting y from x .

The first one is done for you here:

To get y , multiply x by 5 and add 4

This can be written as $5x + 4$

a) To get y , multiply x by and add

This can be written as (1)

b) To get y , multiply x by and subtract

This can be written as (1)

c) To get y , divide x by and add

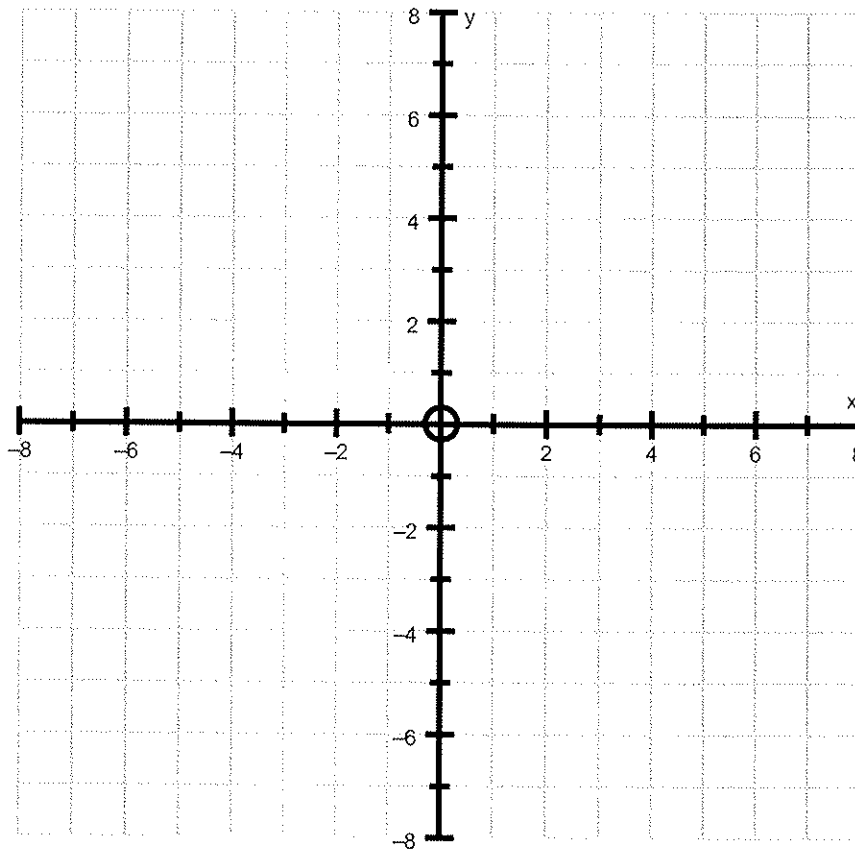
This can be written as (1)

8. a) Plot the following points on the grid below

$(-2,2)$, $(-8, 2)$, $(-2,4)$

Join the points to form a shape and label this A

(1)



b) Reflect shape A in the x axis

Label this new shape B

(1)

c) Rotate **shape A** 180° clockwise, with centre $(0,0)$

Label this new shape C

(1)

d) Translate **shape A** 5 squares right and 7 down

Label this new shape D

(1)

9. Look at these five cards

10

13

12

9

11

a) What is the **mean** of the five cards? Show your working.

..... (1)

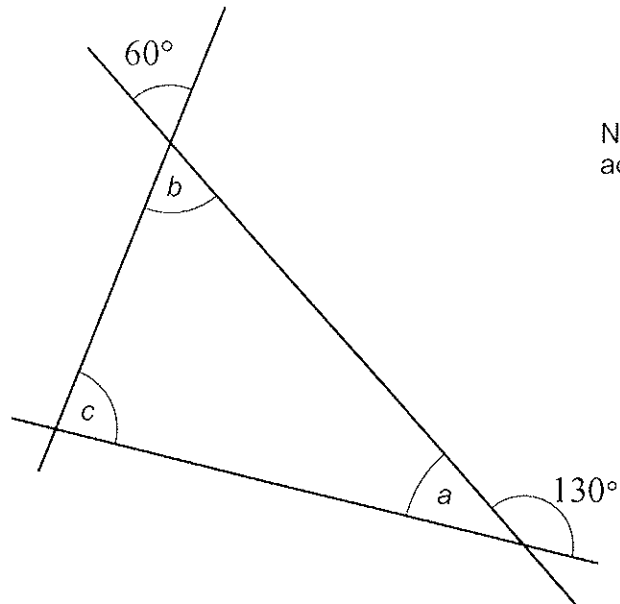
b) What is the **median** of the five cards? Show your working.

..... (1)

c) Four cards have a mean of 10 and a median of 10 but none of the cards is 10. What could they be?

(1)

10. The diagram shows three straight lines



Not drawn accurately

Work out the size of angles a , b and c . Give reasons for your answers.

$a = \dots\dots\dots^\circ$ because

.....

(2)

$b = \dots\dots\dots^\circ$ because

.....

(2)

$c = \dots\dots\dots^\circ$ because

.....

(2)

11.a) In a long jump competition here were the lengths jumped by the five competitors

Alan – 8.80m

Bilal – 8.28m

Chantal – 8.08m

Deena – 8.218m

Eesa – 8.801m

Place the competitors in the order they finished

1st

2nd

3rd

4th

5th

(2)

b) Place these quantities in order from smallest to largest.

$\frac{4}{6}$, -4 , 0.4 , $\frac{4}{7}$, 3.3 , -0.7 , $\frac{29}{7}$

..... , , , , , ,

(2)

12.a) Here is a recipe to make a chocolate cake that will serve 4 people

1200g of flour 900g of sugar 360g of cocoa powder 540g of butter

How much of each ingredient will be needed to make a cake that will serve 6 people?

Flour =g

Sugar = g

Cocoa Powder = g

Butter = g

(2)

b) The cake is to be sold for £30.

Tariq and Ankita are going to share the money in the ratio 3: 3.

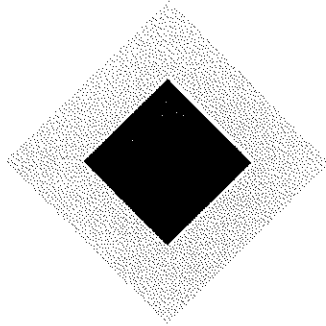
How much money does each receive form the sale?

Tariq = £

Ankita = £

(2)

13.



NOT DRAWN TO SCALE

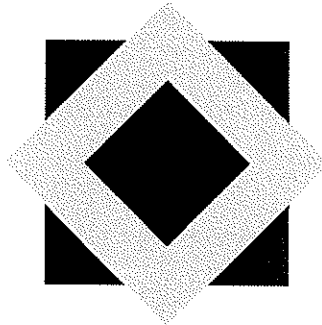
a) If, in the design above, the ratio of grey to black is 2:3, what percentage of the design is black?

..... % (1)

b) In this next design 60% is black, the rest is grey.

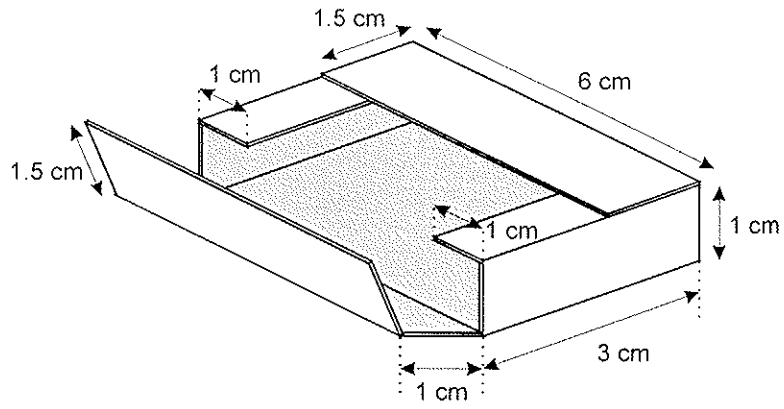
What is the ratio of black to grey?

Write this in its simplest form

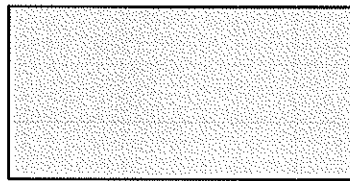


..... : (2)

14. The diagram shows a box



On the grid below, complete the net for the box



15. Look carefully at the list of numbers

5, 8, 64, 30, 15, 6, 16, 17

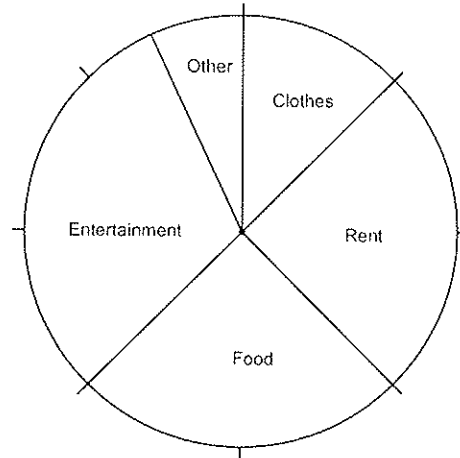
From the list write down

- a) A prime number (1)
- b) A square number (1)
- c) A multiple of 17 (1)
- d) A factor of 30 (1)

If a number is picked randomly from the list, and each number has an equal chance of being selected. Write down the probability of

- e) An even number being selected (1)
- f) A multiple of 3 being selected (1)
- g) A number less than 10 being selected (1)
- h) A number greater than 0 being selected (1)

16. In 1972 the average wage per week was £16. Below is a pie chart that shows how one person spent his money.

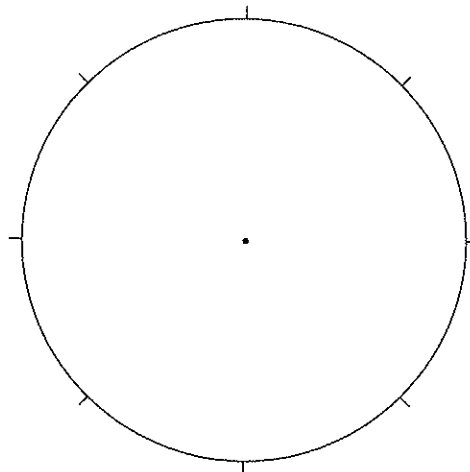


- a) How much money did he spend on food? £..... (1)
- b) How much did he spend on entertainment? £..... (1)

In 2003 the average wage was £600. Below is a table to show how one man spent his money.

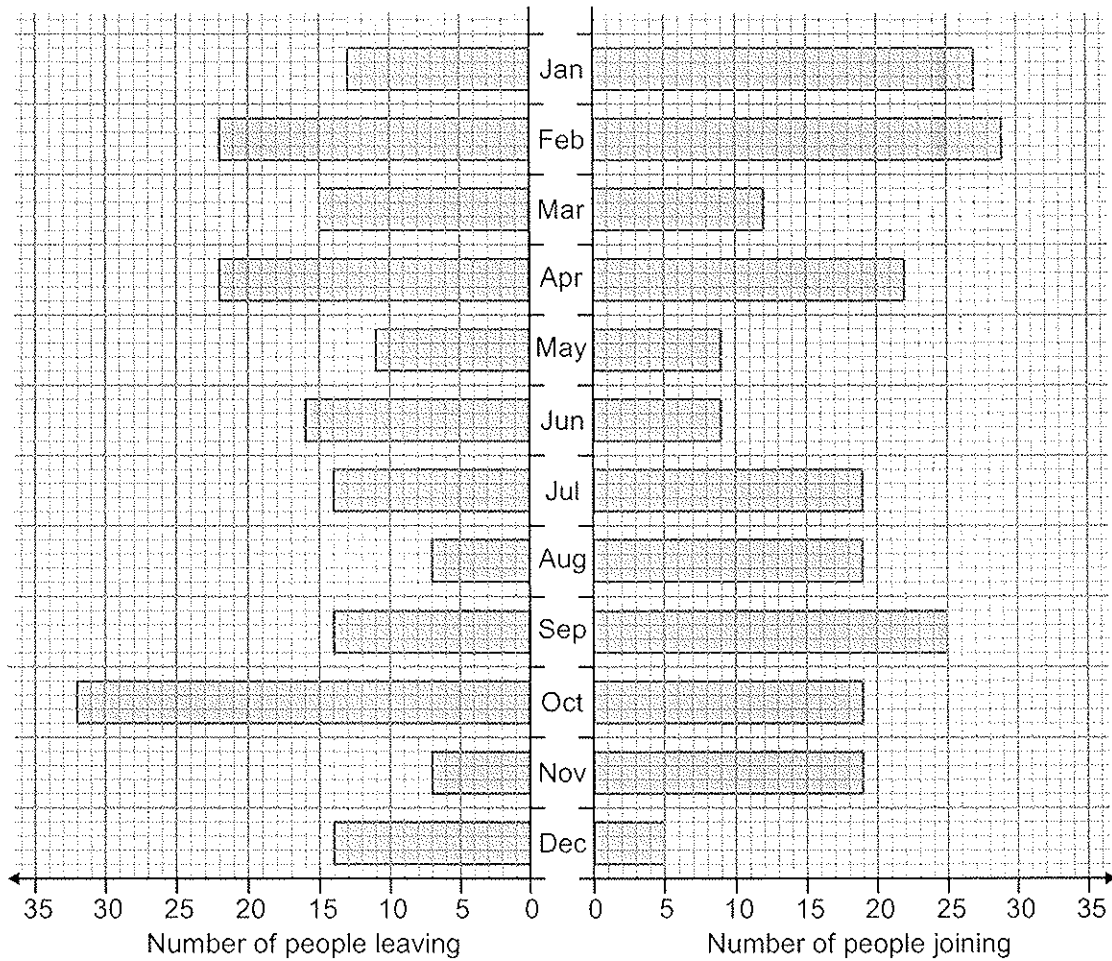
Rent	£600
Food	£300
Entertainment	£150
Other	£150

Complete the pie chart to show this information (2)



17. Each month at a local gym some people leave and some people join.

The diagram shows the numbers below.



- a) In September, how many people left the gym?
..... (1)
- b) In July, how many people joined?
..... (1)
- c) In October what was the **overall** decrease in members?
..... (1)
- d) Which month had the greatest **overall** increase in members?
..... (1)

18. Solve the following equations

a) $6x - 2 = 52$

$x = \dots\dots\dots (1)$

b) $3x + 15 = 9$

$x = \dots\dots\dots (1)$

c) $5x + 2 = 3x + 16$

$x = \dots\dots\dots (1)$

d) $\frac{x}{4} = 11$

$x = \dots\dots\dots (1)$

END OF EXAM