



EXAM PAPERS PRACTICE

GCSE AQA Math 8300

Ratios, Proportion & Rate
of Change

Question Paper

*"We will help you to
achieve A Star "*

Question 1

The ratio of the number of boys to the number of girls in a school is 4:5
There are 95 girls in the school.

Work out the total number of students in the school.

[3 marks]

Question 2

In a box of pens, there are

three times as many red pens as green pens
and two times as many green pens as blue pens.

For the pens in the box, write down
the ratio of the number of red pens to the number of green pens to the number of blue pens.

[2 marks]

Question 3

Sandra has a piece of string 153 cm long.

She cuts the string into three lengths in the ratio 4:2:3

Work out the length, in centimetres, of each piece of string.

Question 4

Tara makes some pancakes.
She uses 750 ml of milk.

(b) Work out how many pancakes she makes.

[2 marks]

Question 5

Katie also has a tin of chocolates.
There are 80 chocolates in the tin.
45% of the chocolates have toffee in the middle.

(b) Work out the number of chocolates that have toffee in the middle.

[2 marks]

Question 6

Pavel and Katie share some sweets in the ratio 3 : 8
Katie gets 32 sweets.

(a) How many sweets does Pavel get?

[2 marks]

Question 7

Robert has 500 g of sugar
 1000 g of butter
 1000 g of flour
 500 ml of milk

(b) Work out the greatest number of shortcakes Robert can make.

[2 marks]

Question 8

Jack is building a wall.

He uses 300 bricks to build part of the wall.

This part of the wall is 5 metres long and 1.5 metres high.

The complete wall will be 8 metres long and 1.5 metres high.

How many more bricks does Jack need to complete the wall?

[3 marks]

Question 9

Here are the ingredients needed to make 12 shortcakes.

Shortcakes

Makes **12** shortcakes

50 g of sugar
200 g of butter
200 g of flour
10 ml of milk

Liz makes some shortcakes.

She uses 25 ml of milk.

(a) How many shortcakes does Liz make?

[2 marks]

Question 10

Robert has 500 g of sugar
 1000 g of butter
 1000 g of flour
 500 ml of milk

(b) Work out the greatest number of shortcakes Robert can make.

[2 marks]

Question 11

Here are the ingredients needed to make 10 pancakes.

Pancakes	
Ingredients to make 10 pancakes	
300 ml	of milk
120 g	of flour
2	eggs

Matthew makes 30 pancakes.

(a) Work out how much flour he uses.

[2 marks]

Question 12

y is directly proportional to the square of x .

When $x = 3$, $y = 36$

Find the value of y when $x = 5$

[4 marks]

Question 13

p is inversely proportional to t .

When $t = 4$, $p = 12$

Find the value of p when $t = 6$

[3 marks]

Question 14

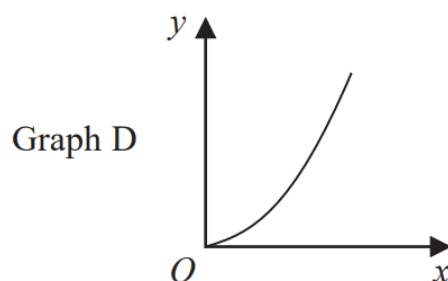
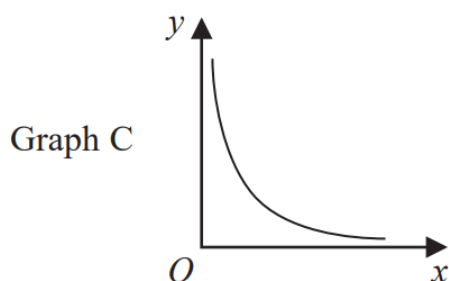
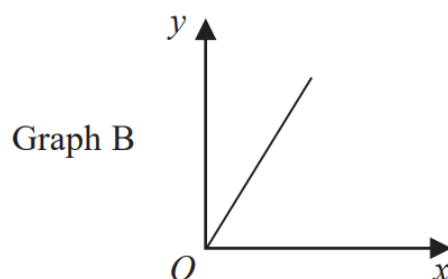
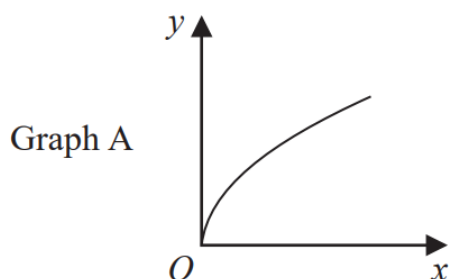
d is inversely proportional to c

When $c = 280$, $d = 25$

Find the value of d when $c = 350$

[3 marks]

Question 15



The graphs of y against x represent four different types of proportionality.

Match each type of proportionality in the table to the correct graph.

Type of proportionality	Graph letter
$y \propto x$	
$y \propto x^2$	
$y \propto \sqrt{x}$	
$y \propto \frac{1}{x}$	

[2 marks]