

Direct and Inverse Proportion - Forming Equations

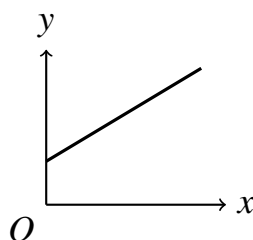
For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

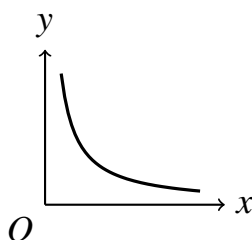
Total marks: **25**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

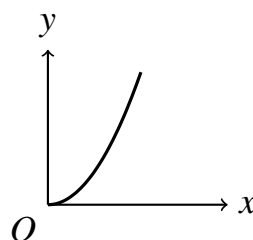
1 Here are sketches of four graphs of y against x .



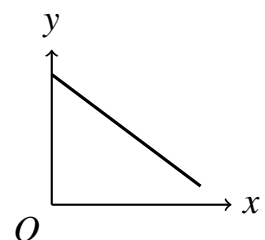
Graph P



Graph Q



Graph R



Graph S

(a) Write down the letter of the graph that could show y is inversely proportional to x .

.....
(1)

(b) Kai says, "Graph P shows that y is directly proportional to x because it is a straight line."

Is Kai correct?

You must give a reason for your answer.

(1)
(Total for Question 1 is 2 marks)

- 2** w is directly proportional to the square of v .
Complete the table of values.

v	2	5	
w	12		147

(3)

(Total for Question 2 is 3 marks)

- 3** T is directly proportional to the square root of L .
When $L = 9$, $T = 6$

(a) Find a formula for T in terms of L .

.....
(3)

(b) Find L when $T = 10$

.....
(2)

(Total for Question 3 is 5 marks)

- 4 The time, t hours, taken to build a wall is inversely proportional to the number of workers, n .
6 workers take 10 hours.
How long will 4 workers take?

..... hours
(3)

(Total for Question 4 is 3 marks)

- 5 f is inversely proportional to s^2
When $s = 2$, $f = 12$
Find the value of f when $s = 4$

.....
(3)

(Total for Question 5 is 3 marks)

- 6 Q is inversely proportional to the square root of R .
 $Q = 15$ when $R = 16$
Show that $Q = 10$ when $R = 36$

(2)

(Total for Question 6 is 2 marks)

- 7** y is inversely proportional to x^2
 x is increased by 25%
Work out the percentage decrease in y .

..... %
(3)

(Total for Question 7 is 3 marks)

- 8** w is directly proportional to v^2
 $w = 18$ when $v = 3$
 v is inversely proportional to $\sqrt{u}$
 $v = 2$ when $u = 36$
Find the value of u when $w = 32$
You must show all your working.

.....
(4)

(Total for Question 8 is 4 marks)
