1 y is directly proportional to the square of x.

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

Find the value of y when $x = 5$

.....

(Total for Question 1 is 4 marks)

2 p is inversely proportional to t.

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

Find the value of p when $t = 6$

.....

(Total for Question 2 is 3 marks)

3 T is directly proportional to the cube of r

$T = 21.76$ when $r = 4$

(a) Find a formula for T in terms of r

(3)

(b) Work out the value of T when $r = 6$

(1)

(Total for Question 3 is 4 marks)

4 F is inversely proportional to the square of v.

Given that $F = 6.5$ when $v = 4$

find a formula for F in terms of v.

.....

(Total for Question 4 is 3 marks)

5 A is inversely proportional to C^2

$A = 40$ when $C = 1.5$

Calculate the value of C when $A = 1000$

$C =$ .....

(Total for Question 5 is 3 marks)

6 The following table gives values of x and y where y is inversely proportional to the square of x.

x	1.5	2	3	4
y	16	9	4	2.25

(a) Find a formula for y in terms of x.

.....

(3)

Given that $x > 0$

(b) find the value of x when $y = 144$

.....

(2)

(Total for Question 6 is 5 marks)

7 T is inversely proportional to m^2

$T = 30$ when $m = 0.5$

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

.....

(3)

(b) Work out the value of T when $m = 0.1$

.....

(1)

(Total for Question 7 is 4 marks)

8 At a depth of x metres, the temperature of the water in an ocean is T°C.
At depths below 900 metres, T is inversely proportional to x.

T is given by

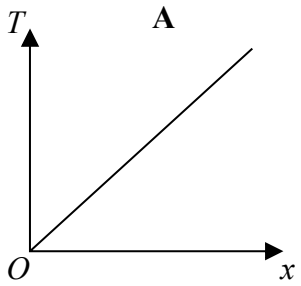
$$T = \frac{4500}{x}$$

(a) Work out the difference in the temperature of the water at a depth of 1200 metres and the temperature of the water at a depth of 2500 metres.

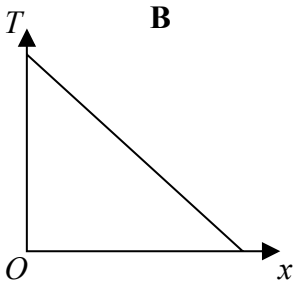
.....°C

(3)

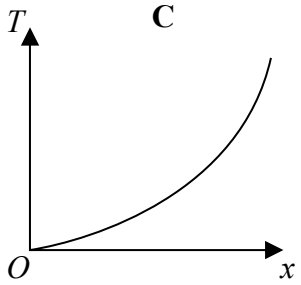
Here are four graphs.



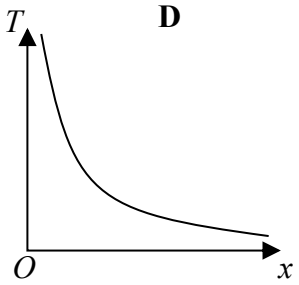
A



B



C



D

One of the graphs could show that T is inversely proportional to x.

(b) Write down the letter of this graph.

.....

(1)

(Total for Question 8 is 4 marks)