

# Direct & Inverse Proportion

## Question Paper

Course	Edexcel IGCSE Maths
Section	1. Numbers & the Number System
Topic	Direct & Inverse Proportion
Difficulty	Medium

**Time allowed:** 70

**Score:** /55

**Percentage:** /100

**Question 1**

Yesterday it took 5 cleaners  $4\frac{1}{2}$  hours to clean all the rooms in a hotel.

There are only 3 cleaners to clean all the rooms in the hotel today.

Each cleaner is paid £8.20 for each hour or part of an hour they work.

How much will each cleaner be paid today?

**[3 marks]****Question 2**

$p$  is inversely proportional to  $t$ .

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

Find the value of  $p$  when  $t = 6$

**[3 marks]****Question 3**

$d$  is inversely proportional to  $c$

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

Find the value of  $d$  when  $c = 350$

**[3 marks]**

**Question 4**

$y$  is inversely proportional to  $x$

When  $x = 1.5$ ,  $y = 36$

Find the value of  $y$  when  $x = 6$

[3 marks]

**Question 5a**

At a depth of  $x$  metres, the temperature of the water in an ocean is  $T^{\circ}\text{C}$ .

At depths below 900 metres,  $T$  is inversely proportional to  $x$ .

$T$  is given by

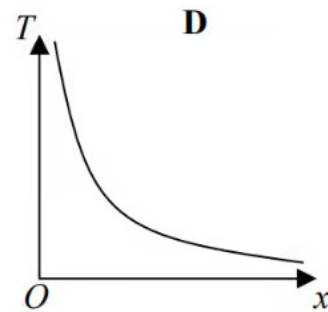
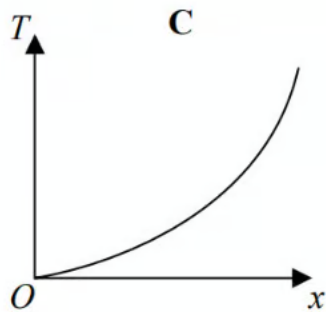
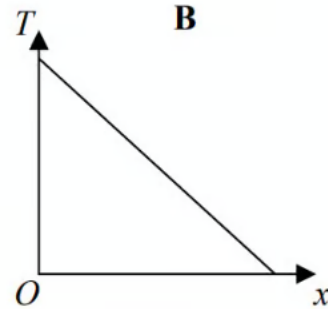
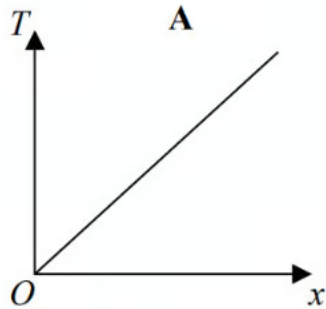
$$T = \frac{4500}{x}$$

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.

[3 marks]

### Question 5b

Here are four graphs.



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

Write down the letter of this graph.

[1 mark]

### Question 6a

$T$  is directly proportional to the cube of  $r$

$$T = 21.76 \text{ when } r = 4$$

Find a formula for  $T$  in terms of  $r$

[3 marks]

**Question 6b**

Work out the value of  $T$  when  $r = 6$

[1 mark]

**Question 7**

$y$  is inversely proportional to  $x$ .

Complete the table.

$x$	12	6	
$y$		4	8

[2 marks]