

# Direct & Inverse Proportion

## Difficulty: Easy

### Question Paper 2

|            |                             |
|------------|-----------------------------|
| Level      | IGCSE                       |
| Subject    | Maths (0580/0980)           |
| Exam Board | CIE                         |
| Topic      | Algebra and graphs          |
| Sub-Topic  | Direct & Inverse Proportion |
| Paper      | Paper 2                     |
| Difficulty | Easy                        |
| Booklet    | Question Paper 2            |

**Time allowed:** 46 minutes

**Score:** /36

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

| A*   | A   | B   | C   | D   | E   |
|------|-----|-----|-----|-----|-----|
| >88% | 76% | 63% | 51% | 40% | 30% |

##### CIE IGCSE Maths (0980)

| 9    | 8   | 7   | 6   | 5   | 4   | 3   |
|------|-----|-----|-----|-----|-----|-----|
| >94% | 85% | 77% | 67% | 57% | 47% | 35% |

## Question 1

$y$  varies inversely as  $(x + 5)$ .

$y = 6$  when  $x = 3$ .

Find  $y$  when  $x = 7$ .

[3]

## Question 2

$w$  varies inversely as the square root of  $x$ .

When  $x = 4$ ,  $w = 4$ .

Find  $w$  when  $x = 25$ .

[3]

### Question 3

$y$  varies as the cube root of  $(x + 3)$ .

When  $x = 5$ ,  $y = 1$ .

Find the value of  $y$  when  $x = 340$ .

[3]

### Question 4

The speed,  $v$ , of a wave is inversely proportional to the square root of the depth,  $d$ , of the water.

$v = 30$  when  $d = 400$ .

Find  $v$  when  $d = 25$ .

[3]

## Question 5

$m$  varies directly as the cube of  $x$ .

$m = 200$  when  $x = 2$ .

Find  $m$  when  $x = 0.4$ .

[3]

## Question 6

$y$  is inversely proportional to  $x^3$ .

$y = 5$  when  $x = 2$ .

Find  $y$  when  $x = 4$ .

[3]

## Question 7

The mass,  $m$ , of a sphere varies directly with the **cube** of its radius,  $r$ .  
 $m = 160$  when  $r = 2$ .

Find  $m$  when  $r = 5$ .

[3]

## Question 8

The electrical resistance,  $R$ , of a length of cylindrical wire varies inversely as the square of the diameter,  $d$ , of the wire.  
 $R = 10$  when  $d = 2$ .

Find  $R$  when  $d = 4$ .

[3]

## Question 9

The mass,  $m$ , of an object varies directly as the **cube** of its length,  $l$ .

$$m = 250 \text{ when } l = 5.$$

Find  $m$  when  $l = 7$ .

[3]

## Question 10

$y$  varies inversely as the square root of  $x$ .

$$\text{When } x = 9, y = 6.$$

Find  $y$  when  $x = 36$ .

[3]

### Question 11

$y$  is **inversely** proportional to  $x^2$ .  
When  $x = 4$ ,  $y = 3$ .

Find  $y$  when  $x = 5$ .

[3]

### Question 12

$y$  varies directly as the square of  $(x - 3)$ .  
 $y = 16$  when  $x = 1$ .

Find  $y$  when  $x = 10$ .

[3]