

Direct & Inverse Proportion

Difficulty: Hard

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	Hard
Booklet	Question Paper 2

Time allowed: 35 minutes

Score: /27

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 the square of x .

$y = 1.5$ when $x = 8$.

Find y when $x = 5$.

[3]

Question 2

The braking distance, d , of a car is directly proportional to the square of its speed, v .

When $d = 5$, $v = 10$.

Find d when $v = 70$.

[3]

Question 3

A spray can is used to paint a wall.

The thickness of the paint on the wall is t . The distance of the spray can from the wall is d .
 t is inversely proportional to the square of d .

$t = 0.2$ when $d = 8$.

Find t when $d = 10$.

[3]

Question 4

The quantity p varies inversely as the square of $(q + 2)$.

$p = 5$ when $q = 3$.

Find p when $q = 8$.

[3]

Question 5

M is proportional to the cube of r .

When $r = 3$, $M = 21.6$.

When $r = 5$, find the value of M .

[3]

Question 6

The quantity y varies as the cube of $(x + 2)$.

$y = 32$ when $x = 0$.

Find y when $x = 1$.

[3]

Question 7

The force of attraction (F) between two objects is inversely proportional to the square of the distance (d) between them.

When $d = 4$, $F = 30$.

Calculate F when $d = 8$.

[3]

Question 8

The air resistance (R) to a car is proportional to the square of its speed (v).

When $R = 1800$, $v = 30$.

Calculate R when $v = 40$.

[3]

Question 9

When cars go round a bend there is a force, F , between the tyres and the ground.

F varies directly as the square of the speed, v .

When $v = 40$, $F = 18$.

Find F when $v = 32$.

[3]