

Direct & Inverse Proportion

Difficulty: Easy

Question Paper 3

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 3

Time allowed: 27 minutes

Score: /21

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

The periodic time, T , of a pendulum varies directly as the square root of its length, l .
 $T = 6$ when $l = 9$.

Find T when $l = 25$.

[3]

Question 2

Seismic shock waves travel at speed v through rock of density d .
 v varies inversely as the square root of d .

$v = 3$ when $d = 2.25$.

Find v when $d = 2.56$.

[3]

Question 3

The force, F , between two magnets varies inversely as the square of the distance, d , between them.

$F = 150$ when $d = 2$.

Calculate F when $d = 4$.

[3]

Question 4

The time, t , for a pendulum to swing varies directly as the square root of its length, l .

When $l = 9$, $t = 6$.

(a) Find a formula for t in terms of l .

[2]

(b) Find t when $l = 2.25$.

[1]

Question 5

The volume of a solid varies directly as the cube of its length.
When the length is 3 cm, the volume is 108 cm^3 .

Find the volume when the length is 5 cm.

[3]

Question 6

The resistance, R , of an object being towed through the water varies directly as the **square** of the speed, v .

$R = 50$ when $v = 10$.

Find R when $v = 16$.

[3]

Question 7

The wavelength, w , of a radio signal is inversely proportional to its frequency, f .
When $f = 200$, $w = 1500$.

(a) Find an equation connecting f and w .

[2]

(b) Find the value of f when $w = 600$.

[1]