

N256 Direct and inverse proportion 2

Q1.

P is inversely proportional to the square root of m .

$$P = 10 \text{ when } m = \frac{1}{4}$$

Work out the value of m when $P = 2$

.....
(Total for question = 3 marks)

Q2.

y is inversely proportional to x^3

$$y = 44 \text{ when } x = a$$

Show that $y = 5.5$ when $x = 2a$

(Total for question = 3 marks)

Q3.

A pendulum of length L cm has time period T seconds.
 T is directly proportional to the square root of L .

The length of the pendulum is increased by 40%.

Work out the percentage increase in the time period.

..... %

(Total for question is 3 marks)

Q4.

d is inversely proportional to c

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

Find the value of d when $c = 350$

$d =$

(Total for question = 3 marks)

Q5.

y is directly proportional to $\sqrt[3]{x}$

$$y = 1\frac{1}{6} \text{ when } x = 8$$

Find the value of y when $x = 64$

.....
(Total for question = 3 marks)

Q6.

y is inversely proportional to x

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

Find the value of y when $x = 6$

.....
(Total for question = 3 marks)

Q7.

y is inversely proportional to d^2
When $d = 10$, $y = 4$

d is directly proportional to x^2
When $x = 2$, $d = 24$

Find a formula for y in terms of x .
Give your answer in its simplest form.

.....
(Total for question = 5 marks)

Q8.

h is inversely proportional to p

p is directly proportional to \sqrt{t}

Given that $h = 10$ and $t = 144$ when $p = 6$
find a formula for h in terms of t

.....

(Total for question = 4 marks)

Q9.

The table shows pairs of values of x and y

x	5	6
y	400	576

(i) Tick the correct statement below.

$y \propto x$

$y \propto x^2$

$y \propto x^3$

(ii) Write a formula for y in terms of x

.....
(Total for question = 4 marks)

Q10.

y is inversely proportional to the square of x .

$y = 8$ when $x = 2.5$

Find the negative value of x when $y = \frac{8}{9}$

.....
(Total for question = 3 marks)

Q11.

The table shows a set of values for x and y .

x	1	2	3	4
y	9	$2\frac{1}{4}$	1	$\frac{9}{16}$

y is inversely proportional to the square of x .

(a) Find an equation for y in terms of x .

.....
(2)

(b) Find the positive value of x when $y = 16$

.....
(2)

(Total for question = 4 marks)

Q12.

T is inversely proportional to the cube of u .

When $u = 5$, $T = 0.0096$

Find the value of u when $T = 0.15$

.....
(Total for question = 3 marks)