GCSE HIGHER · REVISION MAT 2

Equations of proportion

1 $P \propto Q$

$P = 21$ when $Q = 7$.

Write an equation linking P and Q.

2 y is inversely proportional to x.

$y = 5$ when $x = 8$.

Write an equation for y in terms of x.

3 What shape is the graph of y against x when $y \propto x$?

4 The cost of a pizza is proportional to the square of its diameter.

A 20 cm pizza costs £6.

Find the cost of a 30 cm pizza.

5 $y \propto x^3$

$y = 16$ when $x = 2$.

Show that $y = 54$ when $x = 3$.

6 Light intensity I is inversely proportional to d^2.

$I = 40$ when $d = 3$.

Find I when $d = 6$.

7 $y \propto x^2$

Show that if x increases by 10%, y increases by 21%.

8 T is proportional to $\sqrt{L}$.

$T = 2$ when $L = 1$.

Find L when $T = 3$.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Equations of proportion

1 $P = 3Q$

2 $k = 40$

$y = \frac{40}{x}$

3 A straight line through the origin

4 $C = kd^2$, $k = \frac{6}{400}$

£13.50

5 $y = 2x^3$

$2 \times 27 = 54$

6 $I = \frac{360}{d^2}$

$I = 10$

7 $(1.1)^2 = 1.21$

21% increase

8 $T = 2\sqrt{L}$

$\sqrt{L} = 1.5$

$L = 2.25$

Mr&Mrs MATHS