Maths

Other Direct Proportion Relationships

Mrs Dennett

Other direct proportional relationships

1. Y is directly proportional to X^2

Y = 50 when X = 5

a) Find a formula for Y in terms of X

b) Find the value of Y when X = 3

2. p is directly proportional to $\sqrt{q}$

Given that p = 20 when q = 4, find a formula for p in terms of q.

Use the formula to find

a) p when q = 49

b) q when p = 100

3. Given than $x \propto z^2$

Find the missing values in the table.

X	100		6
Z	20	10	

4. The height of some trees, h, is proportional to the cube of their diameters, d. A tree with diameter 50 cm is 15.8 m tall. What is the height of tree with a diameter 60 cm? Give your answer to 3 s.f.

Answers

Other direct proportional relationships

1. Y is directly proportional to X^2

Y = 50 when X = 5

$Y = 2X^2$

a) Find a formula for Y in terms of X.

b) Find the value of Y when X = 3

$Y = 18$

2. p is directly proportional to $\sqrt{q}$

Given that p = 20 when q = 4, find a formula for p in terms of q.

$p = 10\sqrt{q}$

Use the formula to find

a) p when q = 49

$p = 70$

b) q when p = 120

$q = 144$

3. Given than $x \propto z^2$

$x = 0.25z^2$

Find the missing values in the table.

X	100	25	6
Z	20	10	$2\sqrt{6}$

4. The height of some trees, h, is proportional to the cube of their diameters, d. A tree with diameter 50 cm is 15.8 m tall. What is the height of tree with a diameter 60 cm? Give your answer to 3 s.f.

27.3 metres tall