Direct proportion: worded problems *lesson handout*

On whiteboards

The fabric costs £5 for 1 metre. Write the cost of each length.
What do you multiply by each time?

Metres, L	1	2	3	4	7	10
Cost (£), C						

We do

Pay is directly proportional to the hours worked. 6 hours pay £54.
How much do 5 hours pay?

Hours	Pay (£)
0	0

You do

The area painted is directly proportional to the paint used.
3 litres cover 36 m^2. How much do 5 litres cover?

Litres	Area (m^2)
0	0

You do

The mass of some boxes is directly proportional to the number of boxes. 10 boxes have a mass of 40 kg. Find the mass of 3 boxes.

Boxes	Mass (kg)
0	0

We do

The mass, m grams, of a wire is directly proportional to its length, L metres. 5 m of wire has a mass of 60 g.
(a) Find a formula for m in terms of L.
(b) Find the mass of 9 m of wire.

Metres	Mass (g)
0	0

(a) _____

(b) _____

You do

The distance, d km, a cyclist rides is directly proportional to the time, t hours. In 2 hours she rides 36 km.
(a) Find a formula for d in terms of t.
(b) How far does she ride in 5 hours?

Hours	Kilometres
0	0

(a) _____

(b) _____

You do

The number of bricks, N, for a wall is directly proportional to its area, A m^2. 4 m^2 needs 240 bricks.
(a) Find a formula for N in terms of A.
(b) How many bricks does a wall of 2.5 m^2 need?

m^2	Bricks
0	0

(a) _____

(b) _____

We do

The mass, m grams, of a wire is directly proportional to its length, L metres. 5 m of wire has a mass of 60 g.
(a) Find a formula for m in terms of L.
(b) What length of wire has a mass of 180 g?

Metres	Mass (g)
0	0

(a) _____

(b) _____

You do

The distance, d km, a cyclist rides is directly proportional to the time, t hours. In 2 hours she rides 36 km.
(a) Find a formula for d in terms of t.
(b) How long does it take her to ride 72 km?

Hours	Kilometres
0	0

(a) _____

(b) _____

You do

The cost, C pounds, of petrol is directly proportional to the volume, V litres. 20 litres cost £30.
(a) Find a formula for C in terms of V.
(b) How many litres can you buy with £45?

Litres	Cost (£)
0	0

(a) _____

(b) _____