Direct Proportion (Ingredients Questions)

Quantities are proportional if they increase at the same rate.

Recipe for 12 cupcakes

Softened butter:	110g
Golden Caster Sugar:	120g
Large eggs:	2
Vanilla extract:	½ tea spoon
Self-Raising Flour	150g

How many eggs do you need to make 18 cupcakes?
2 eggs required for 12 cupcakes
1 egg required for 6 cupcakes
3 eggs are therefore required for 18 cupcakes.

Each of these quantities are proportional to each other. Thet must all increase at the same rate.

How much Golden Caster sugar required for 17 cupcakes?
120g of Golden Caster Sugar required for 12 cupcakes.
$120g \div 12 = 10g$ so each cupcakes requires 10g of Golden Caster Sugar.
17 cupcakes therefore requires $17 \times 10g = 170g$ of Golden Caster Sugar.

You can divide each of these quantities by 12 to find the amount of each ingredient required for 1 cupcake.

Direct Proportion (Table Questions)

Bus Fare	£3	£6	
Journey Time	15 minutes		5 minutes

Every 15 minutes of bus journey costs £3

£6 is double the cost of £3 so you can double the amount of time to 30 minutes

Since every 15 minutes costs £3, we can divide these both by 3 so get every 5 minutes costs £1. So this is £1
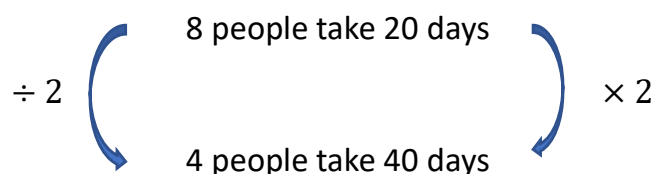
Inverse Proportion

Quantities are inversely proportional if as one quantity increases, the other quantity decreases by the same rate.

It takes 20 days for 8 people to hand out leaflets for a town.

The number of days it takes to hand out the leaflets is inversely proportional to number of people it takes to hand them out.

How long would it take for 4 people to hand out the leaflets?

Halving the number of people means it will take double the amount of time.

$\div 2$ 8 people take 20 days $\times 2$

4 people take 40 days

It would take 40 days for 4 people to hand out the leaflets.