KEY VOCAB

Ratio shows how much of one quantity there is of something compared to another. They are usually written in the form a:b. The order in which a ratio is stated is important.

Equivalent ratios have the same value even though they may look different, e.g. 50:100 and 1:2.

Proportion is when two or more quantities have the same relative size.

Unitary means the value of a single unit. Think of other words that begin with 'uni' meaning 'one' such as unicycle, unison, uniform etc.

Simplifying Ratios

Simplify...

4 : 12 : 28

÷ 4 ÷ 4 ÷ 4

1 : 3 : 7

Share £60 in the ratio 7 : 3 : 5

Step 1

7 + 3 + 5 = 15 parts

£60 ÷ 15 parts = £4

1 part = £4

Step 2

£28 : £12 : £20

MATHS

Y9 Ratio & Proportion

FURTHER READING

https://www.bbc.co.uk/bitesize/topics/zxw76sg
https://corbettmaths.com/contents/
https://www.pearsonactivelearn.com/app/library

Frank, Mary and Seth shared some sweets in the ratio 4 : 5 : 7 Seth got 18 more sweets than Frank. **Work out the total number of sweets they shared.**

F:M:S 4:5:7 ⇨ F:S 4:7 ⇨ 3 parts = 18 sweets, 1 part = 6 sweets ⇨ 4+5+7 = 16, 16 x 6 = 96

Answer: 96 sweets

KEY KNOWLEDGE

Directly Proportional is when one amount **increases**, another amount **increases** at the same rate. This can be written as:

$y = kx$ where k is the constant of proportionality.

Example: y is directly proportional to x, when x = 3 then y = 15.
What is the constant of proportionality (k)?

Answer (do this after your lesson):

Inversely Proportional is when one value **decreases** at the same rate that the other **increases**. This can be written as:

$y = \frac{k}{x}$ where k is the constant of proportionality.

Example: y is indirectly proportional to x, when x = 4 and y = 3.
What is the constant of proportionality (k)?

Answer (do this after your lesson):