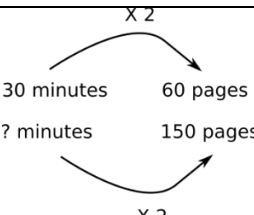
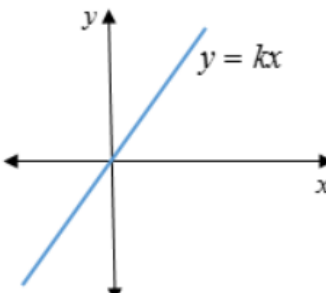


Foundation Topic: Fractions, Decimals, Percentages and Ratio 2

Topic/Skill	Definition/Tips	Example
Ratio	Ratio compares the size of one part to another part . Written using the ':' symbol.	3 : 1 
Simplifying ratios	Divide all parts of the ratio by a common factor .	$5 : 10 = 1 : 2$ (divide both by 5) $14 : 21 = 2 : 3$ (divide both by 7)
Ratios in the form $1 : n$ or $n : 1$	Divide both parts of the ratio by one of the numbers to make one part equal 1 .	$5 : 7 = 1 : \frac{7}{5}$ in the form $1 : n$ $5 : 7 = \frac{5}{7} : 1$ in the form $n : 1$
Understand that ratios must be in the same units	If ratios are given with different units , convert both parts to the same unit . Units should not be given in the final answer.	$\pounds 3.20 : 60p$ $= 320p : 60p$ $= 16 : 3$
Sharing in a ratio	1. Add the total parts of the ratio. 2. Divide the amount to be shared by this value to find the value of one part. 3. Multiply this value by each part of the ratio. Use only if you know the total .	Share $\pounds 60$ in the ratio $3 : 2 : 1$. Add $3 + 2 + 1 = 6$ Divide $60 \div 6 = 10$ Multiply $3 \times 10 = 30$, $2 \times 10 = 20$, $1 \times 10 = 10$ $\pounds 30 : \pounds 20 : \pounds 10$
Ratio already shared	Find what one part of the ratio is worth using the unitary method .	Money was shared in the ratio $3:2:5$ between Ann, Bob and Cat. Given that Bob had $\pounds 16$, find out the total amount of money shared. $\pounds 16 = 2$ parts So $\pounds 8 = 1$ part $3 + 2 + 5 = 10$ parts, so $8 \times 10 = \pounds 80$
Ratio and scale	If the ratio for the scale factor is $1 : n$, to find the real length, multiply the scale length by n . To find the length on the scale model, divide the real length by n .	A scale of 1cm for every 2m means a ratio of $1 : 200$ A length of 3cm on the model represents 600cm or 3m in real life. A length of 10m in real life would be 5cm on the model.
Ratio and fractions	Add the ratio numbers together to get the denominator .	There are 4 red and 3 blue counters in a bag. The ratio of red to blue is $4 : 3$ The fraction which are red is $\frac{4}{7}$
Ratios as linear functions	Write the ratio as $x : y$ and decide what has to be done to make the parts equal.	The ratio of A to B is $3 : 5$ $3 : 5 = x : y$ To make them equal we have to multiply x by 5 and y by 3. $5x = 3y$

Proportion	Proportion compares the size of one part to the size of the whole . Usually written as a fraction.	In a class with 13 boys and 9 girls, the proportion of boys is $\frac{13}{22}$ and the proportion of girls is $\frac{9}{22}$
Proportional reasoning	Comparing two things using multiplicative reasoning and applying this to a new situation. Identify one multiplicative link and use this to find missing quantities.	
Unitary method	Finding the value of a single unit and then finding the necessary value by multiplying the single unit value.	3 cakes require 450g of sugar to make. Find how much sugar is needed to make 5 cakes. 3 cakes = 450g So 1 cake = 150g ($\div$ by 3) So 5 cakes = 750 g ($\times$ by 5)
Best buys	Find the unit cost by dividing the price by the quantity . The lowest number is the best value.	8 cakes for £1.28 $\rightarrow$ 16p each ($\div$ by 8) 13 cakes for £2.05 $\rightarrow$ 15.8p each ($\div$ by 13) Pack of 13 cakes is best value.
Direct proportion	If two quantities are in direct proportion, as one increases , the other increases by the same percentage.	For example, speed and distance travelled are directly proportional.
Inverse proportion	If two quantities are inversely proportional, as one increases , the other decreases by the same percentage.	For example, travel time and speed are inversely proportional.
Direct proportion graph	If x and y are directly proportional, their graph will be a straight line with a positive gradient which passes through the origin (0,0).	
Direct proportion relationship	If y is directly proportional to x, this can be written as $y \propto x$ An equation of the form $y = kx$ represents direct proportion, where k is the constant of proportionality.	If x and y are directly proportional and $x = 4$ when $y = 20$, find y when $x = 7$. $y = kx \rightarrow 20 = 4k \rightarrow k = 5$ $y = 5x \rightarrow$ when $x = 7$, $y = 5 \times 7 = 35$

Where else is the FDP topic used:

Algebra Probability

Ratio and Proportion

Links to other subjects:

