

Key Vocabulary

relative size

missing values

integer multiplication

percentages

unequal sharing & grouping

scale factor

Using Ratio Language

For every elephant, there are two lions.



For every two triangles, there are three circles.



For every four apples, there are five bananas.



Ratio and Fractions



For every 1 elephant, there are two lions.

1:2



$\frac{1}{3}$ of the animals are elephants.



For every 1 apple, there are four bananas.

1:4

$\frac{1}{5}$ of the fruit is apples.

You can find the denominator by adding the two numbers in the ratio.

A **ratio** is a way to show a relationship or compare two numbers of the same kind. For example, we may use a **ratio** to compare the number of boys to the number of girls in your class room.



Using the Ratio Symbol

The symbol we use for ratio is a colon



The ratio of apples to bananas: 1:4

The ratio of bananas to apples: 4:1



The ratio of pentagons to circles: 1:3

The ratio of circles to triangles: 3:2

The ratio of circles to triangles to pentagons: 3:2:1

The ratio of pentagons to triangles to circles: 3:2:1

Solving Ratio Problems



Below are some ratio based problems and some of the strategies that can be used to solve them.

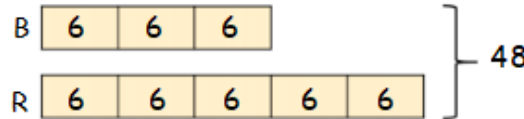
Ralf has a bag of marbles.

For every 3 blue marbles there are 5 red ones.

If there are 48 in the packet in total, how many of each colour are there?

18 blue marbles

30 red marbles



$$48 \div 8 = 6$$

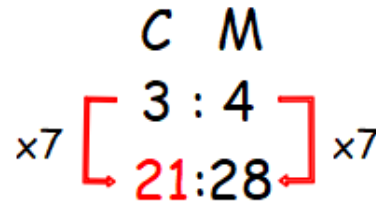
$$3 \times 6 = 18 \text{ blue marbles}$$

$$5 \times 6 = 30 \text{ red marbles}$$

Emma mixes 3 parts chocolate to 4 parts milk to make milkshake.

If she uses 28 parts milk, how many parts chocolate does she use?

She uses 21 parts chocolate



You do 4×7 to get to 28 so to find out how much chocolate she used do 3×7 .

Ingredients for 16 mince pies

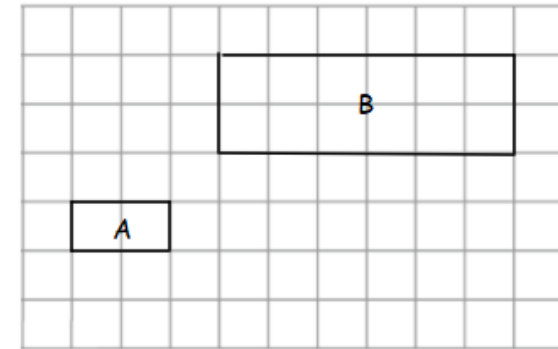
240 g of butter
360 g of flour
120 g of sugar
280 g of mincemeat

To make 8 mince pies you would need to divide all the ingredients by 2 ($\div 2$).

To make 4 mince pies you would need to divide all the ingredients by 4 ($\div 4$).

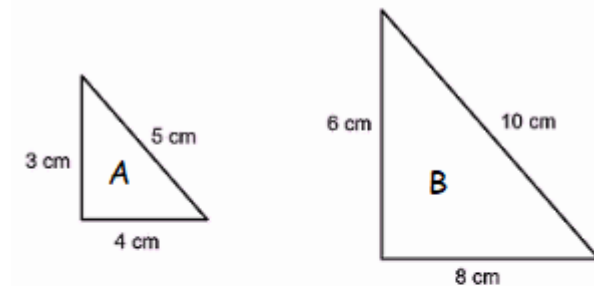
To make 12 mince pies you would need to divide all the ingredients by 4 and then multiply them by 3 ($\div 4 \times 3$).

Scale Factors



Shape B has been enlarged from shape A by a scale factor of 3.

This is because the sides of shape B are three times as long as the sides of shape A.



Shape B has been enlarged from shape A by a scale factor of 2

This is because the sides of shape B are twice as long as the sides of shape A.