

Knowledge Organiser: Ratio (11a)

What you need to know:

Writing a Ratio

Ratio: The is the relationship between two or more numbers and each number is separate by a colon.



The ratio of footballs to rugby balls: 1:4

The ratio of rugby balls to footballs: 4:1

Football is mentioned first so that is why the 1 comes before 4.

Rugby is mentioned first so that is why the 4 comes before 1.

As fractions: If we wanted to represent the ratio as fractions then:

1 : 4

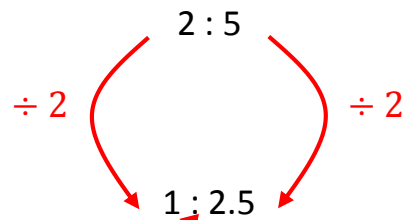
$= \frac{1}{5} : \frac{4}{5}$

The denominator comes from adding the two parts of the ratio together.

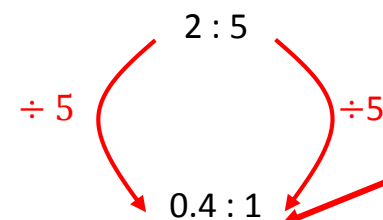
Writing ratios as 1:n or n:1

This means that the ratio needs to be simplified in a specific way. You may end up with fractions or decimals as part of your answer.

Write 2 : 5 in the form 1 : n



Write 2 : 5 in the form n : 1



You must end up with a 1 in the correct place - read the question carefully!

Key Terms:

Ratio: Relationship between two or more numbers.

Part: This is the numeric value '1' of, would be equivalent to.

Simplify: Divide all parts of a ratio by the same number.

Equivalent: Equal in value.

Convert: Change from one form to another.

Scale: The ratio of the length in a drawing to the length of the real thing.

Proportion: A name we give to a statement that two ratios are equal.

Exchange rate: The value of one currency for the purpose of conversion to another.

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What you need to know:

Simplifying a ratio

You must make sure that your ratio has been simplified fully by finding the highest common factor.

Simplify $12 : 20$
 $\div 4$
 $= 3 : 5$

This could have been done in two steps by dividing by 2 and then by 2 again.

Simplify $60 : 40 : 100$
 $\div 10$
 $= 6 : 4 : 10$
 $\div 2$
 $= 3 : 2 : 5$

This could have been done in one step by dividing by 20.

Sharing in a ratio

Sharing in a ratio: To share in a ratio we can use bar modelling to visualise the steps.

Add the parts of the ratio together.

Share £45 in the ratio 2:7.

$2 + 7 = 9$ parts

Divide the total by the number of parts.

$45 \div 9 = 5$

$2 : 7$ x

Multiply each part of the ratio by the value of one part,

$= £10 : £35$

2 : 7

5	5
5	5
=10	5
	5
	5
	5
	5
	=35

Sharing ratio when given one part:

Joy and Martin share money in the ratio 2:5. Martin gets £18 more than Joy. How much do they each get?

$5 - 2 = 3$ parts difference

$18 \div 3 = 6$
 $2 : 5$ x

Find how many parts difference there are and then divide.

2 : 5

6	6
6	6
	6
	6
	6
=12	=30

$= £12 : £30$