

Year 6 – Spring Block 6 – Ratio – Ratio And Proportion Problems

About This Resource:

This PowerPoint has been designed to support your teaching of this small step. It includes a starter activity and an example of each question from the Varied Fluency and Reasoning and Problem Solving resources also provided in this pack. You can choose to work through all examples provided or a selection of them depending on the needs of your class.

National Curriculum Objectives:

Mathematics Year 6: (6R1) [Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts](#)

Mathematics Year 6: (6R2) [Solve problems involving the calculation of percentages \[for example, of measures, and such as 15% of 360\] and the use of percentages for comparison](#)

Mathematics Year 6: (6R3) [Solve problems involving similar shapes where the scale factor is known or can be found](#)

Mathematics Year 6: (6R4) [Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples](#)

More [Year 6 Ratio](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Year 6 – Spring Block 6 – Ratio
Hello, Year 6, it's Tuesday 5th May.

Part 1

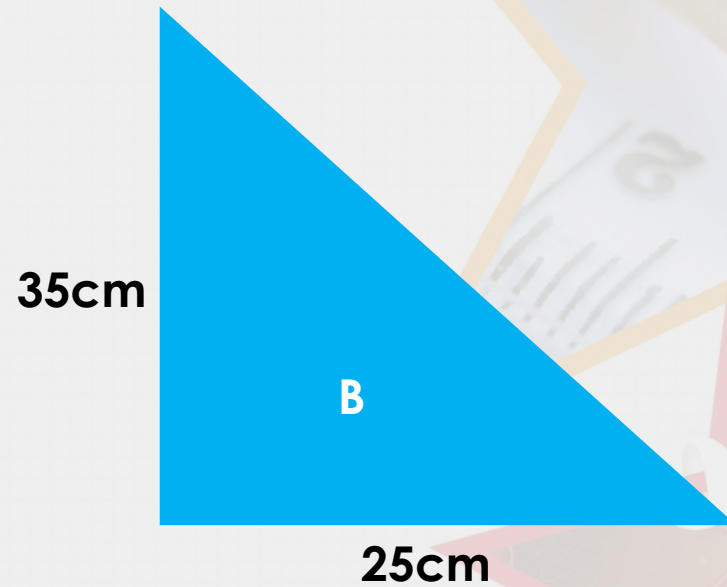
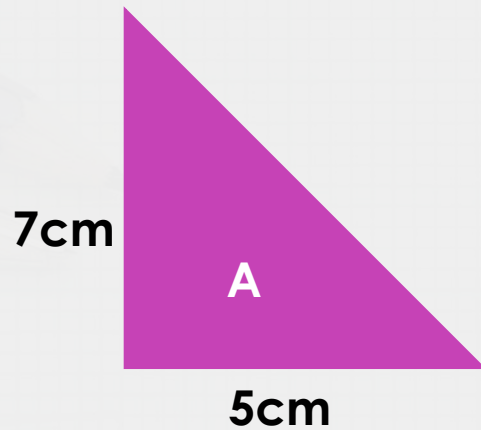
WALT Solve Ratio And Proportion Problems

(This is the last of our ratio sessions – tomorrow we are moving onto some lessons on statistics.)

See my green notes to help you.

Introduction

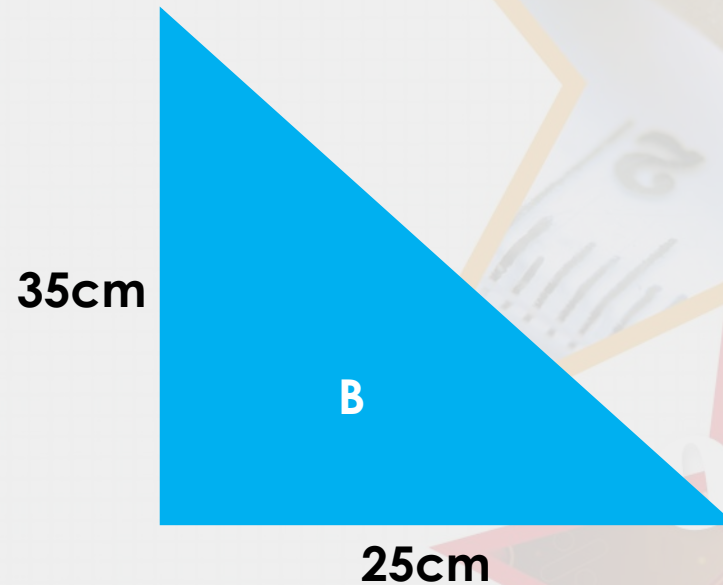
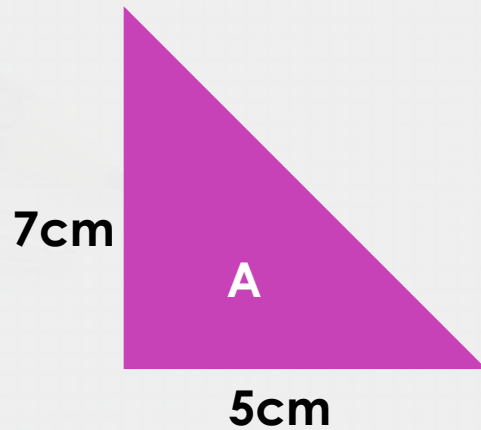
How many times smaller is shape A than shape B?



Not to scale

Introduction

How many times smaller is shape A than shape B?



5 times smaller

(we know this because $35 \div 7 = 5$ and $25 \div 5 = 5$ ~ so remember to divide the new length by the old length when solving these problems.)

Not to scale

Varied Fluency 1

Shape A has been enlarged by different scale factors to make shapes B, C and D.

Calculate the missing measurements.

Shape	Length	Width
A	10cm	12cm
B		24cm
C	40cm	
D		36cm

Varied Fluency 1

Shape A has been enlarged by different scale factors to make shapes B, C and D.

Calculate the missing measurements.

Shape	Length	Width
A	10cm	12cm
B	20cm*	24cm*
C	40cm**	48cm**
D	30cm***	36cm***

*24cm is double 12cm, so Shape B has been enlarged by a scale factor of 2, so double the length (10cm) to get the new length: 20cm.

**40cm is 4 times the size of 10 cm, so C uses a scale factor of 4. Multiply 12 by 4 to get the new width: $12\text{cm} \times 4 = 48\text{cm}$.

***36cm is three times as large as 12 cm, so a scale factor of 3 has been used. Times 10cm by 3 to make shape D's length of 30cm.

Varied Fluency 2

True or false?

I need 20g of flour for every 15g of sugar.

If I have 175g of ingredients, I will have 80g of flour.

Varied Fluency 2

True or false?

I need 20g* of flour for every 15g* of sugar.

If I have 175g** of ingredients, I will have 80g of flour.

False. There will be 100g of flour.***

*A quick way to do this is to add up 20g of flour and 15g of sugar ~ which makes 35g.

**Now see how many times this total goes into the grand total of ingredients (175g). $175 \div 35 = 5$.

***So, there are 5 lots of 20g of flour and 5 lots of 15g of sugar in the recipe:

$5 \times 20\text{g of flour} = 100\text{g (not 80g)}$

Varied Fluency 3

The ratio of strawberries to grapes is 7:3.

Harrison has 30 pieces of fruit in total.

Calculate the number of strawberries and grapes.

Varied Fluency 3

The ratio of strawberries to grapes is 7:3.

Harrison has 30 pieces of fruit in total.

Calculate the number of strawberries and grapes.

21 strawberries, 9 grapes.

I can prove this by knowing that 7 strawberries and 3 grapes is 10. If Therefore, to calculate amounts for 30 pieces of fruit, I have to multiply my original numbers by 3.

Varied Fluency 4

Will is buying some paint.

The ratio of white to blue to green paint is 10:30:90.

If he buys 120 litres of blue paint, how much white and green paint will he need?



Varied Fluency 4

Will is buying some paint.

The ratio of white to blue to green paint is 10:30:90.

If he buys 120 litres of blue paint, how much white and green paint will he need?



40 litres of white paint; 360 litres of green paint. Because 120 litres of blue is 4×30 , so multiply the other amounts by 4 too.

Well done! It's over to you now.

Go to Part 2 and choose your challenge! Normal rules apply: page 1 will give you an easier challenge, page 2 will be about the same as what we've just practised and page 3 will be more of a stretch.

You only need to do the first four questions on your chosen challenge – the ones on the left-hand side. If you want extra practice, you can then do the four questions on the right hand side of your chosen challenge page. When you finish, don't forget to mark your answers before sharing, so I can see where you need help.