Year 6 – Spring Block 6 – Ratio – Calculating Scale Factors

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

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

Good morning, Year 6! It's Monday 4th May 2020 – let's make sure it's a good week!

Part 1

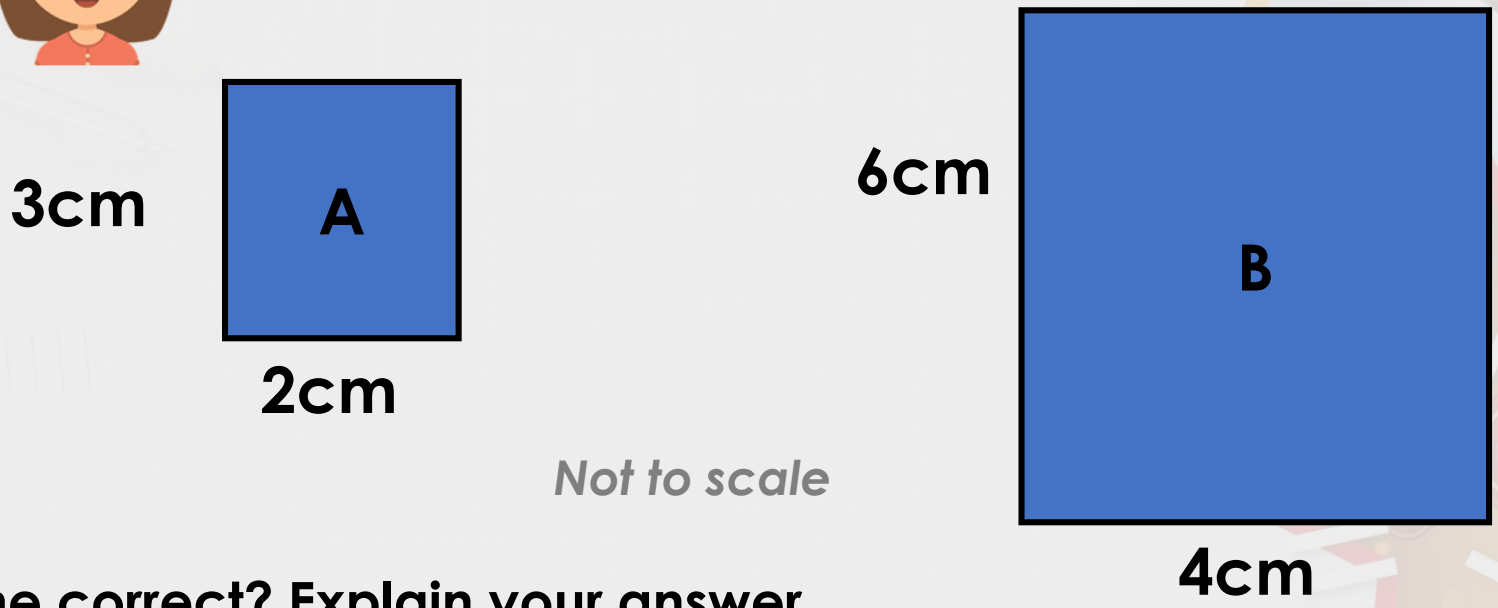
WALT Calculate Scale Factors

This is following on form the work you did on Friday that introduced you to scale factors. *See my notes in green to help you.*

Introduction

Maeve says,

> **Shape B has been enlarged from shape A by a scale factor of 4.**



Not to scale

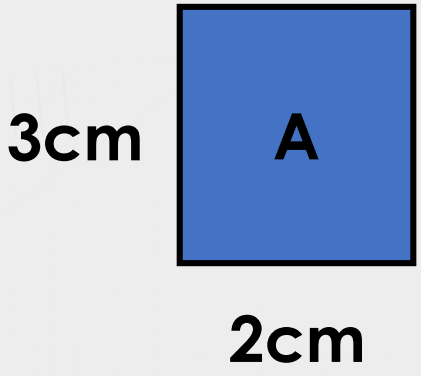
Is she correct? Explain your answer.

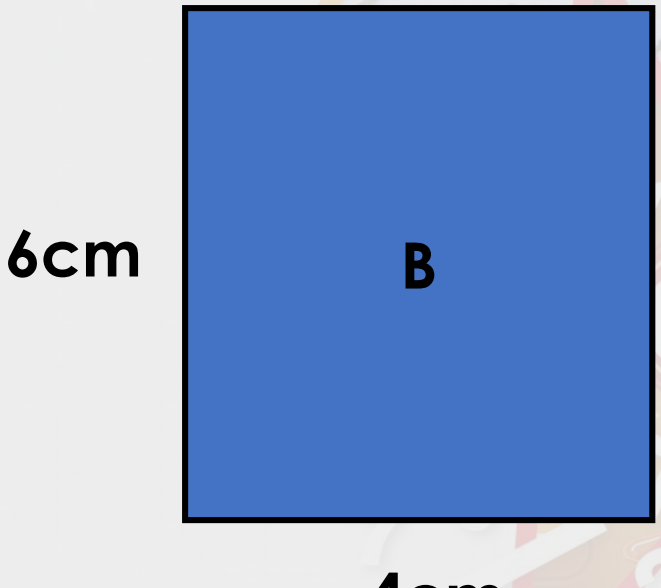
Remember that you calculate scale factors by multiplying by that number – so you would need to multiply the shape's dimensions by 4 to enlarge it by a scale factor of 4.

Introduction

Maeve says,

Shape B has been enlarged from shape A by a scale factor of 4.





Is she correct? Explain your answer.

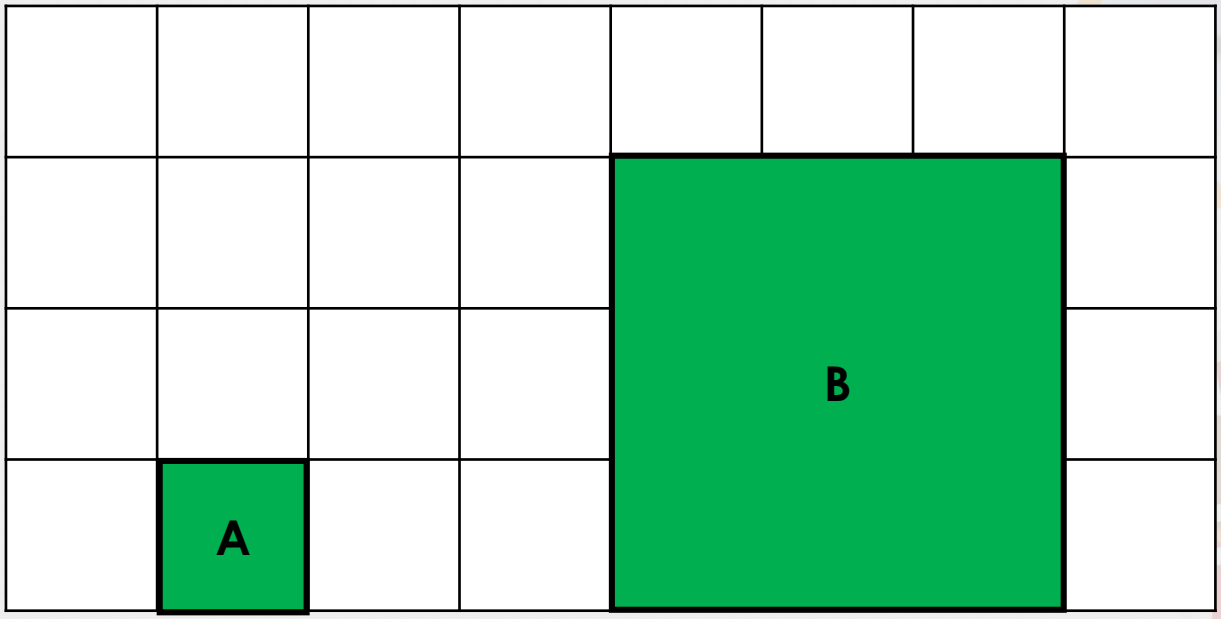
No because it has been enlarged by a scale factor of 2 not 4.

Not to scale

Varied Fluency 1

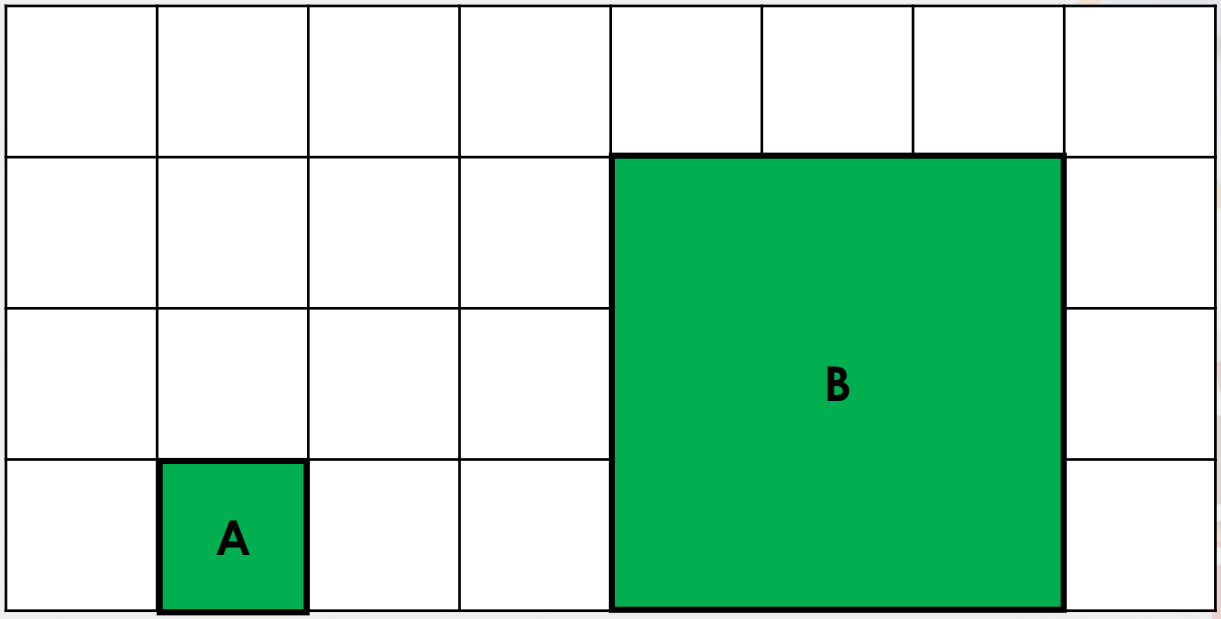
True or false?

Shape A has been increased by a scale factor of 2.5 to create shape B.



Varied Fluency 1

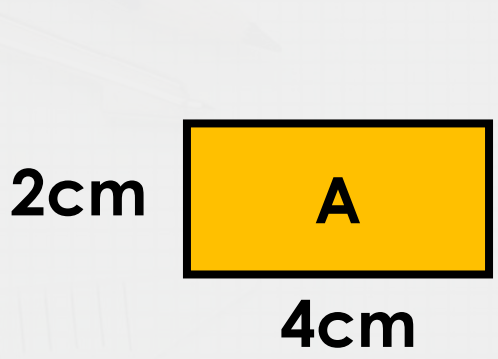
True or false?
Shape A has been increased by a scale factor of 2.5 to create shape B.

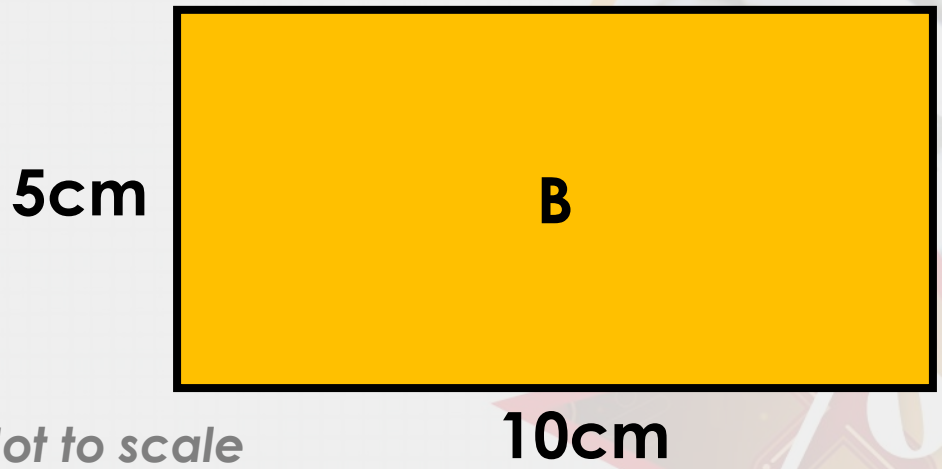


False. It has been increased by a scale factor of 3.
If A had been increased by a scale factor of 2.5, each side would become 2.5cm (1X2.5).

Varied Fluency 2

Maggie says she has enlarged her shape by a scale factor of 2.5.
Shape B is her new shape.



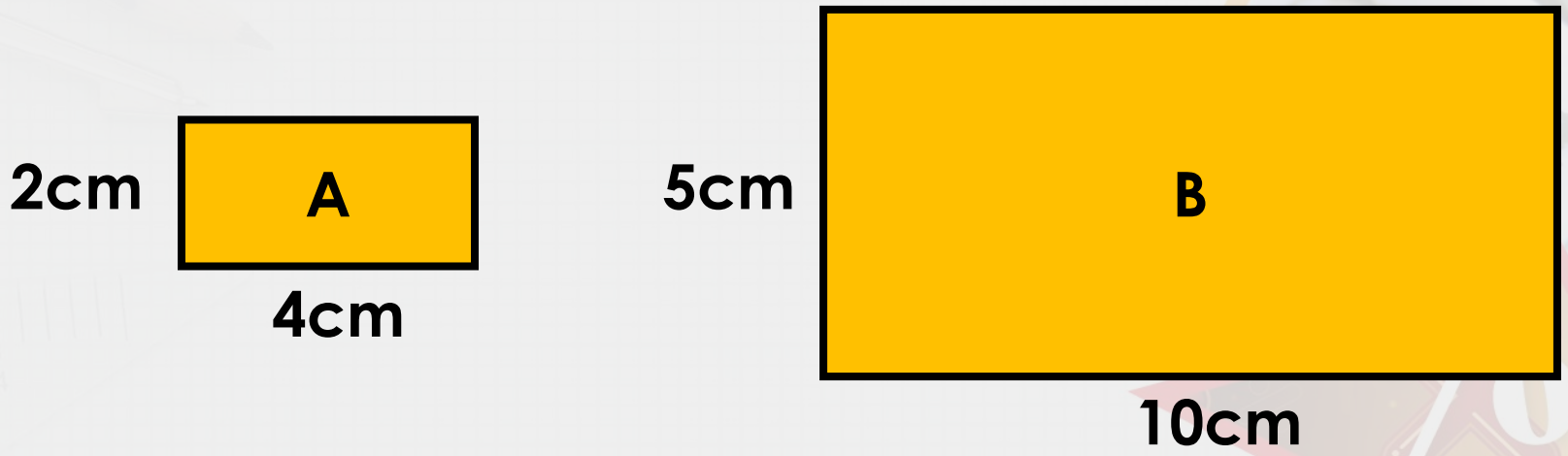


Not to scale

Is she correct?

Varied Fluency 2

Maggie says she has enlarged her shape by a scale factor of 2.5.
Shape B is her new shape.



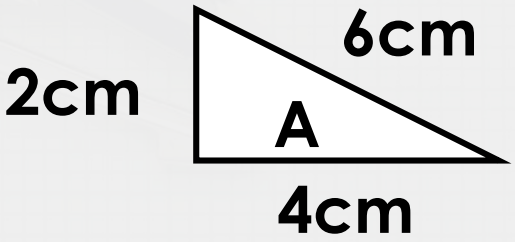
Is she correct?

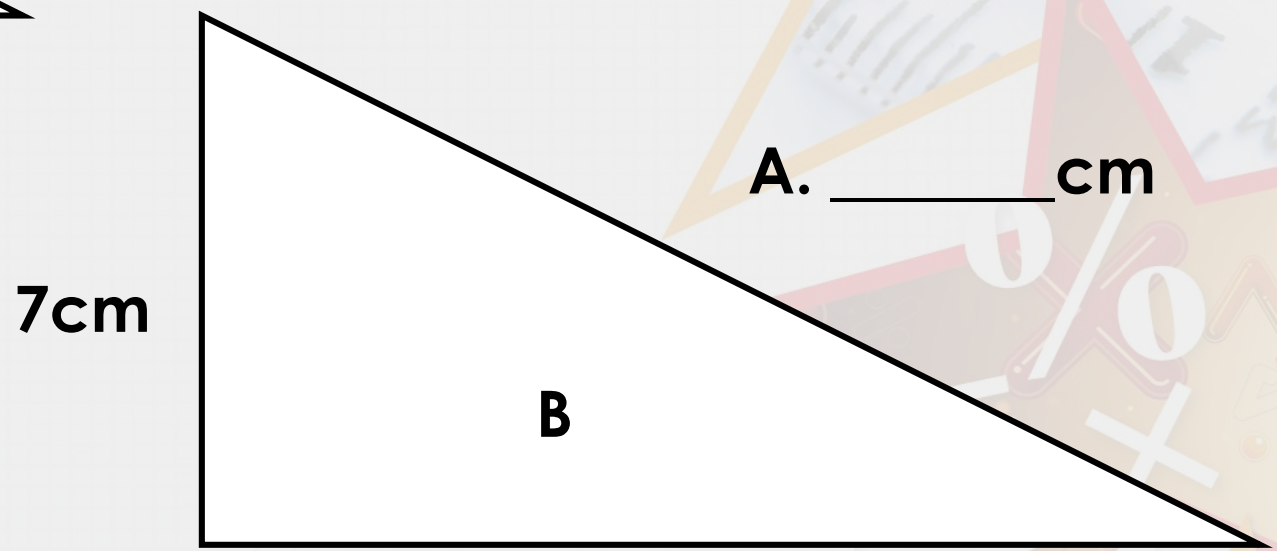
Yes, each measurement is 2.5 times its original size.

Not to scale

Varied Fluency 3

Triangle B has been scaled from triangle A.
Find the missing lengths.





A. _____cm

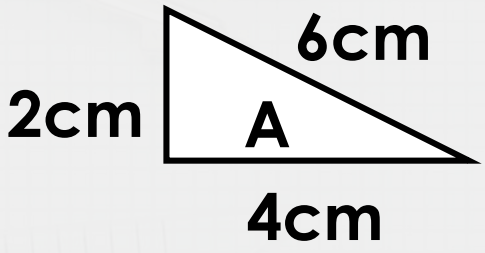
B. _____cm

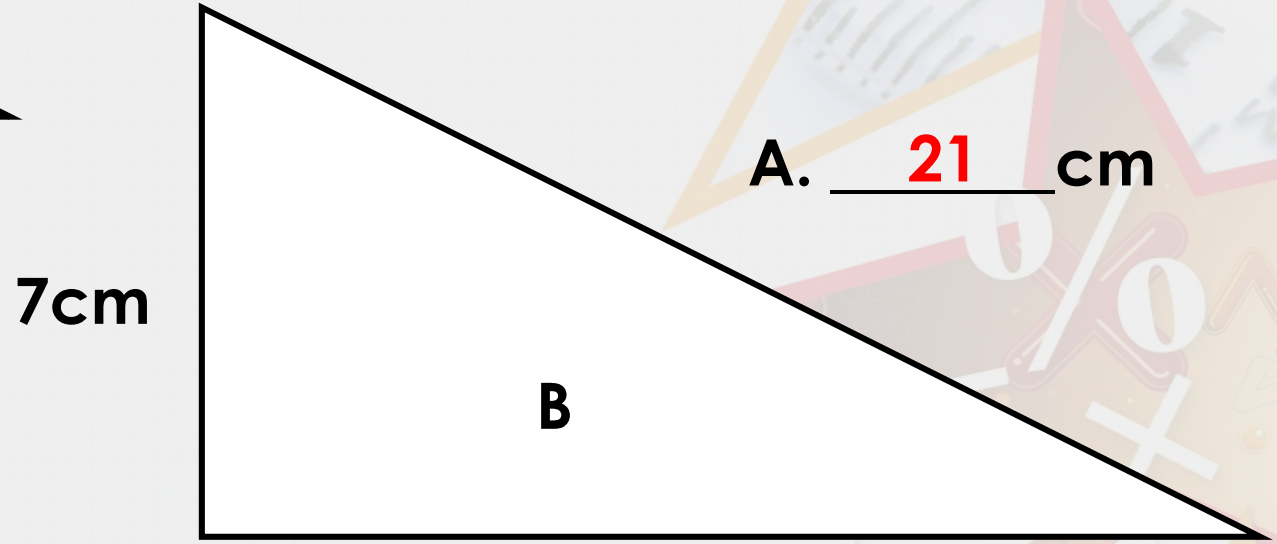
Not to scale

Varied Fluency 3

Triangle B has been scaled from triangle A.

Find the missing lengths. *Divide the length you are given for the second shape (7cm) by the length it was in the original shape (2cm). 7 ÷ 2 = 3.5 ~ therefore a scale factor of 3.5 has been used. Multiply the other sides of the original shape by 3.5 to discover their new measurements.*





A. 21 cm

B. 14 cm

Not to scale

Varied Fluency 4

Square B and C has been scaled from square A.
Complete the table.

Square	Length of side	Scale Factor
A	8cm	-
B	?	2.5
C	40cm	?

Varied Fluency 4

Square B and C has been scaled from square A.
Complete the table. **8 X 2.5 = 20 **When you have been given the missing length and you need to work out the missing scale factor, use the inverse! In this case, that would be 40 ÷ 8 = 5*

Square	Length of side	Scale Factor
A	8cm	-
B	20cm*	2.5
C	40cm	5**

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.