Spring: Block Six

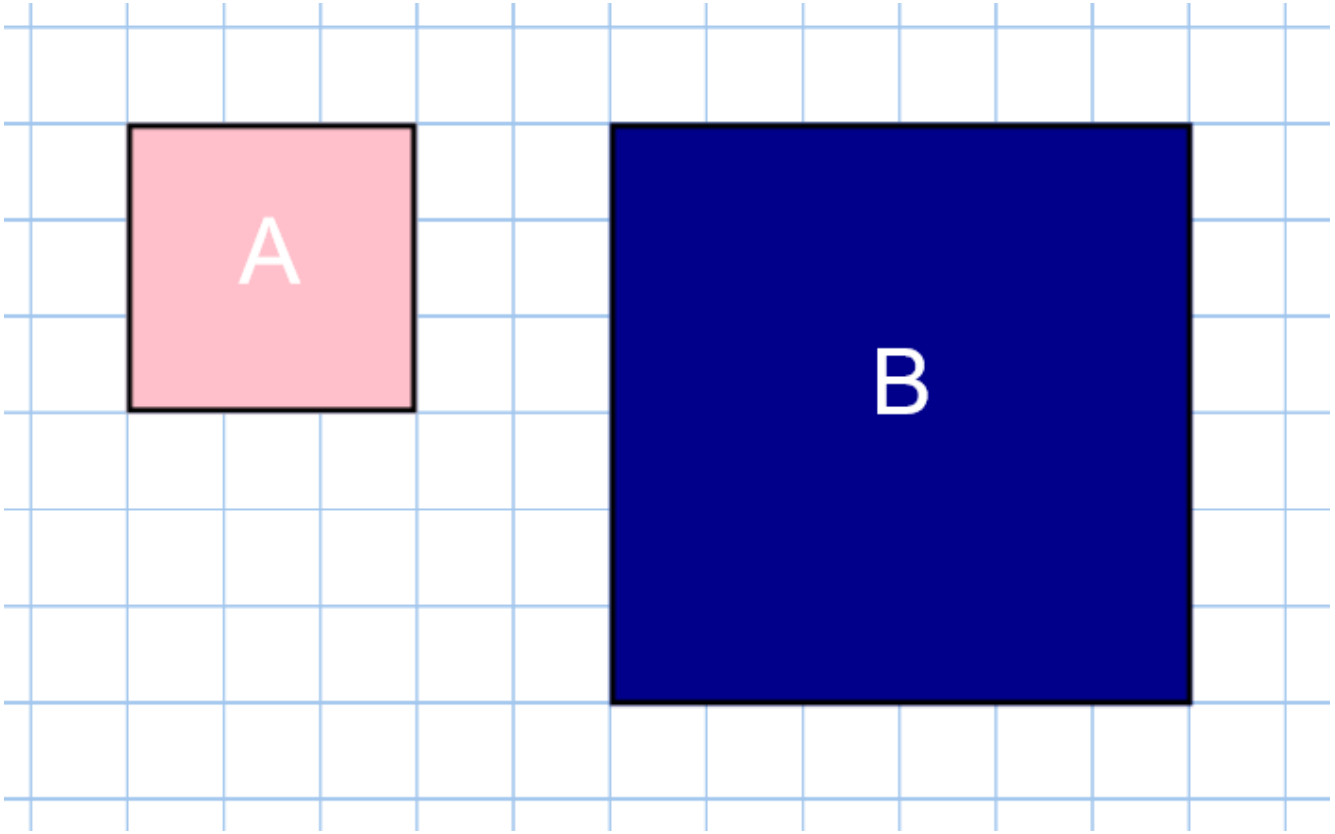
Ratio

Lesson Five:

Lesson Objective: To use scale factors.

ANCHOR TASK:

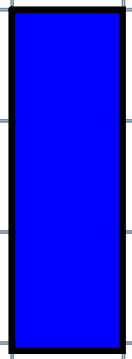
How many times bigger is shape A compared to shape B?

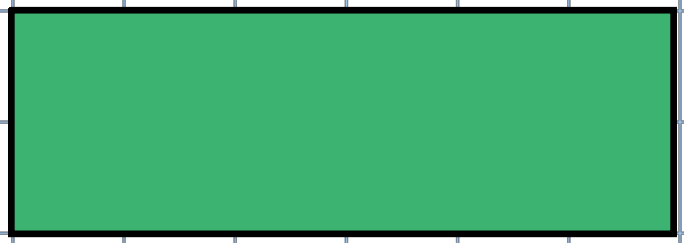


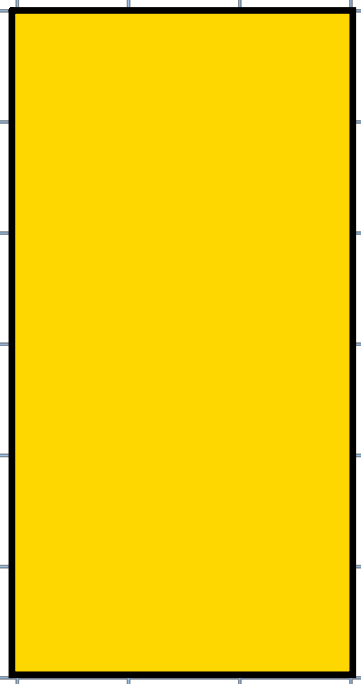
Explain your thinking.

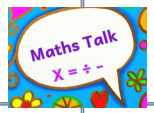
MATHEMATICAL FLUENCY:

Copy these rectangles onto squared paper then draw them double the size, triple the size and 4 times as big.









What does enlargement mean?

MATHEMATICAL FLUENCY:

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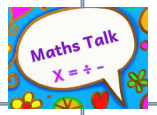
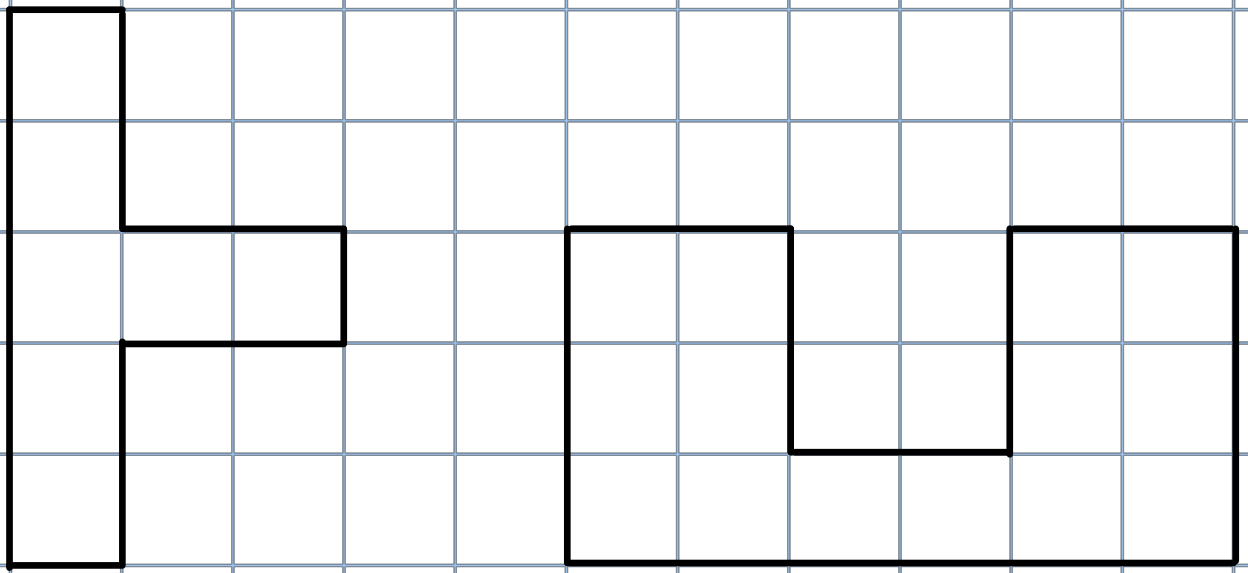
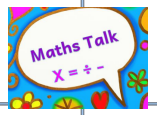


What does enlargement mean?

MATHEMATICAL FLUENCY:

Copy these shapes onto squared paper then draw them twice as big and three times as big.





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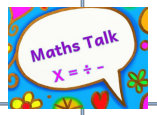


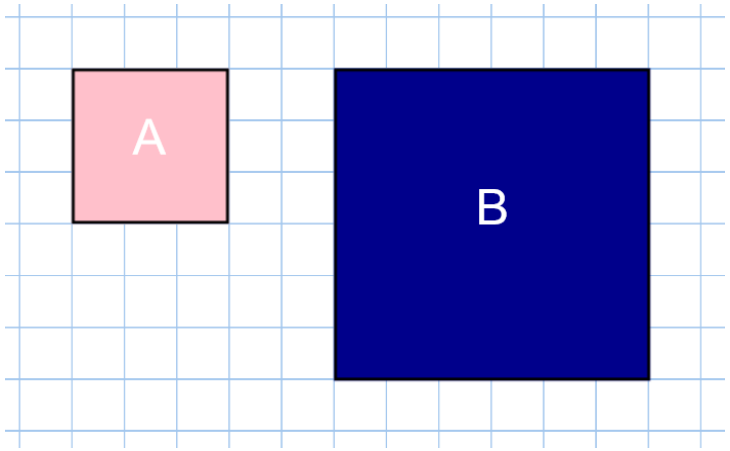
What does enlargement mean?

MATHEMATICAL FLUENCY:

Scale factor

The **size** of an enlargement is described by its **scale factor**.

For example, a scale factor of 2 means that the new shape is twice the size of the original. A scale factor of 3 means that the new shape is three times the size of the original.



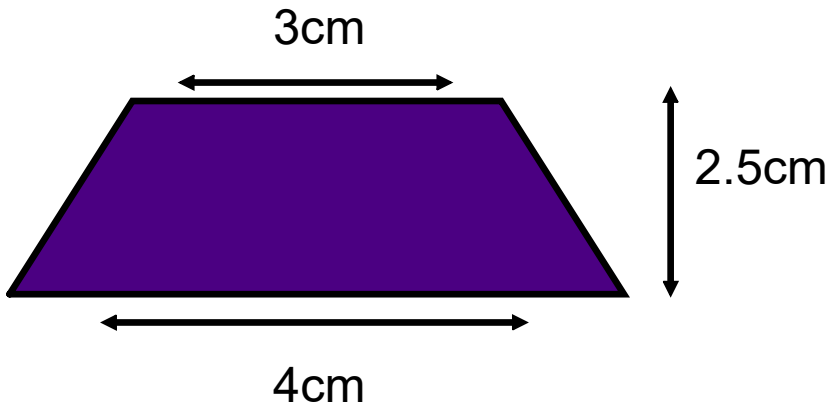
So in this example, shape A has enlarged by a scale factor 2.

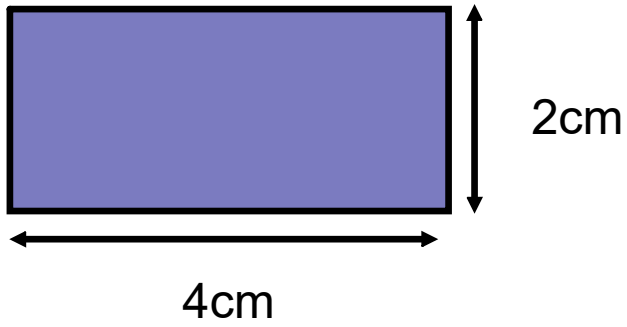
MATHEMATICAL FLUENCY:

*not to scale.

Enlarge the following shapes by

- Scale factor 2
- Scale factor 3
- Scale factor 4





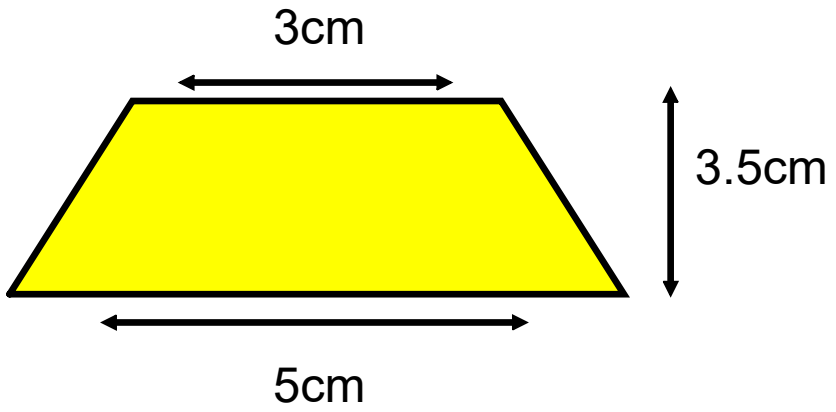
How much has the shape been increased by? How do you know? Can you prove it?

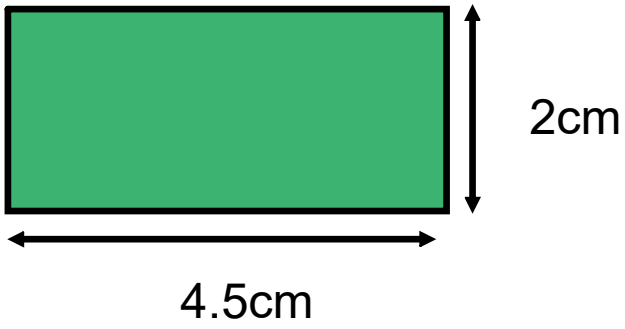
MATHEMATICAL FLUENCY:

*not to scale.

Enlarge the following shapes by

- Scale factor 2
- Scale factor 3
- Scale factor 4





Have the angles changed size or not?

REASONING AND PROBLEM SOLVING:

Draw 3 rectangles with the same area where the length increases by the scale factor 3.

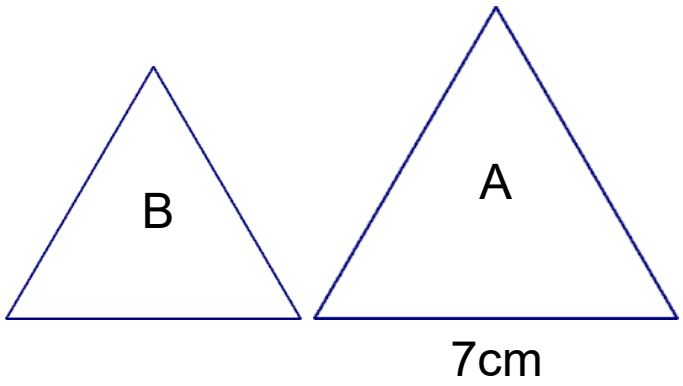
Can you find more than one way of doing this?

REASONING AND PROBLEM SOLVING:

*not to scale.

Here are two equilateral triangles.

Triangle A is 2 times larger than triangle B.



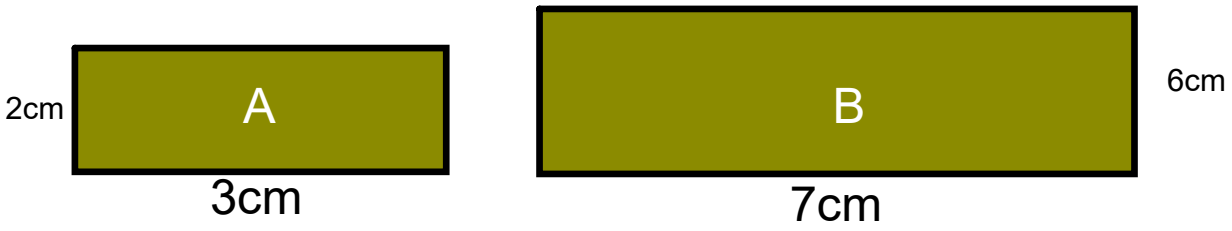
Find the perimeter.

REASONING AND PROBLEM SOLVING:

*not to scale.

Tom says,

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



Do you agree? Explain your answer.