

Tuesday 23rd June

Year 5/6: Using Scale Factors

Introduction

David has a packet of pencils.

For every 2 red pencils, there are 4 green pencils.

If there are 30 pencils in total, how many of each colour are there?



Introduction

David has a packet of pencils.

For every 2 red pencils, there are 4 green pencils.

If there are 30 pencils in total, how many of each colour are there?



Red = 10 pencils Green = 20 pencils

Varied Fluency 1

Enlarge this shape by a scale factor of 3.



7.4cm

12.2cm

Not to scale

Varied Fluency 1

Enlarge this shape by a scale factor of 3.



7.4cm

12.2cm

Height: 22.2cm Length: 36.6cm

Not to scale

Varied Fluency 2

Tommy says,



A scale factor of two means you multiply each side of the original shape by four.

Is he correct?

Varied Fluency 2

Tommy says,



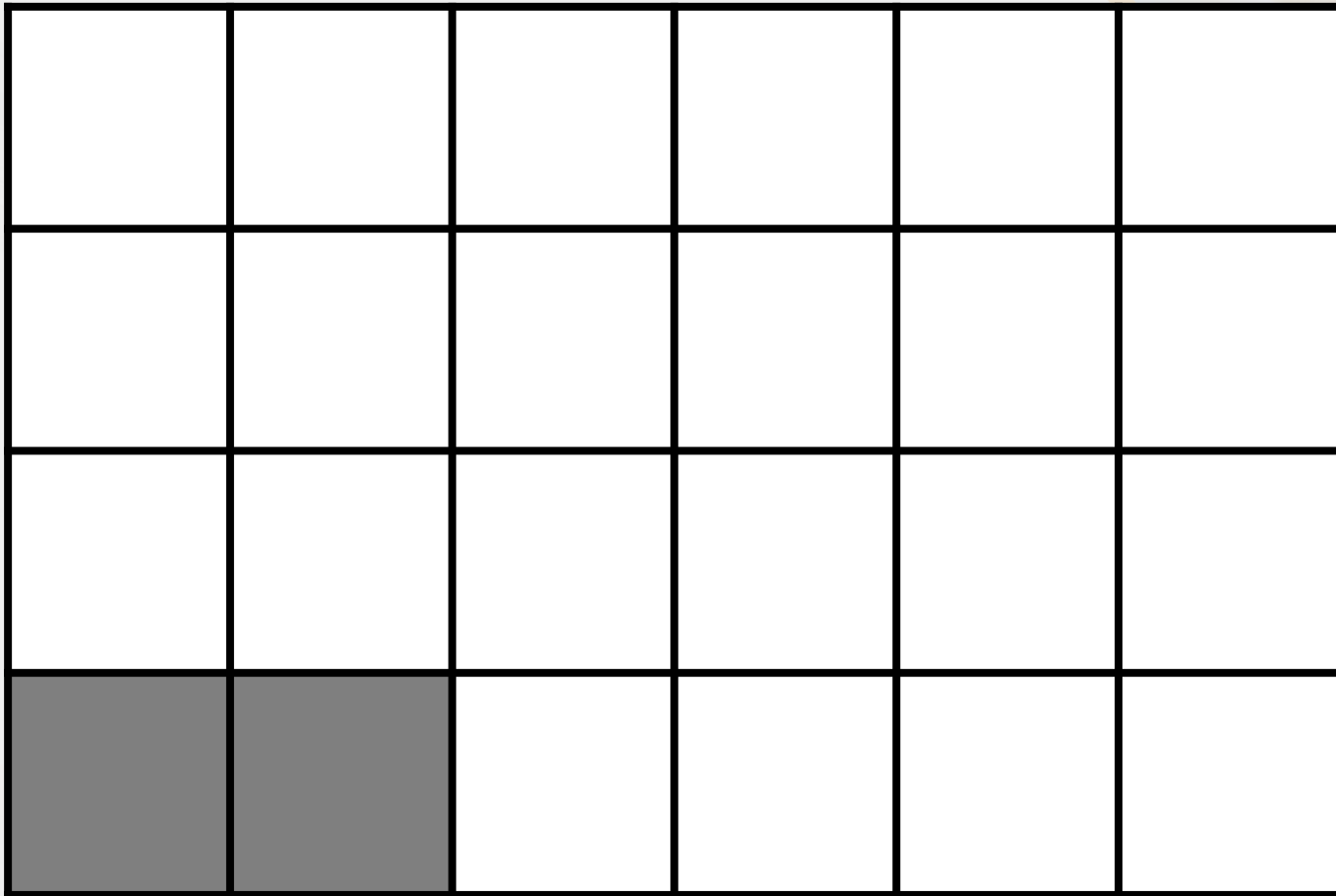
A scale factor of two means you multiply each side of the original shape by four.

Is he correct?

No, a scale factor of two means you multiply each side by two.

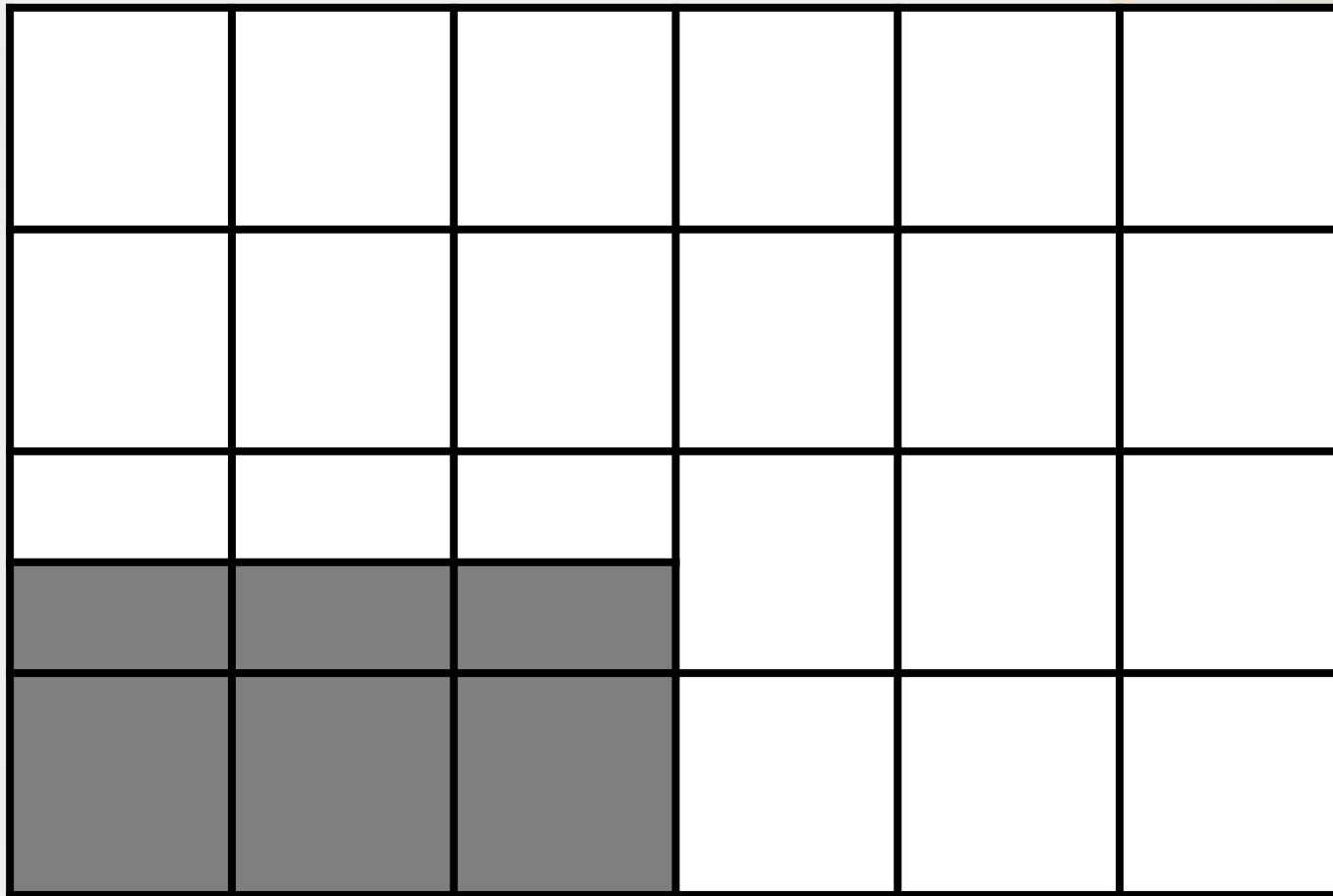
Varied Fluency 3

**Copy this shape onto squared paper.
Draw it using a scale factor of 1.5.**



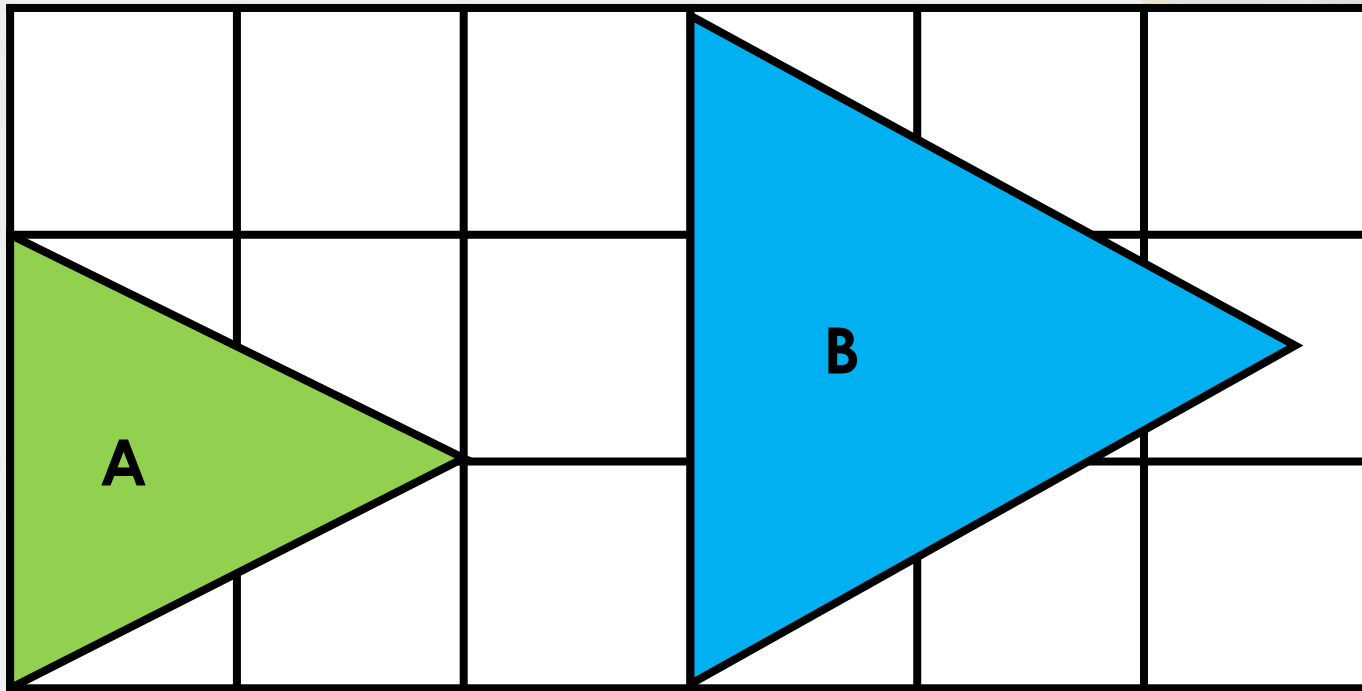
Varied Fluency 3

**Copy this shape onto squared paper.
Draw it using a scale factor of 1.5.**



Varied Fluency 4

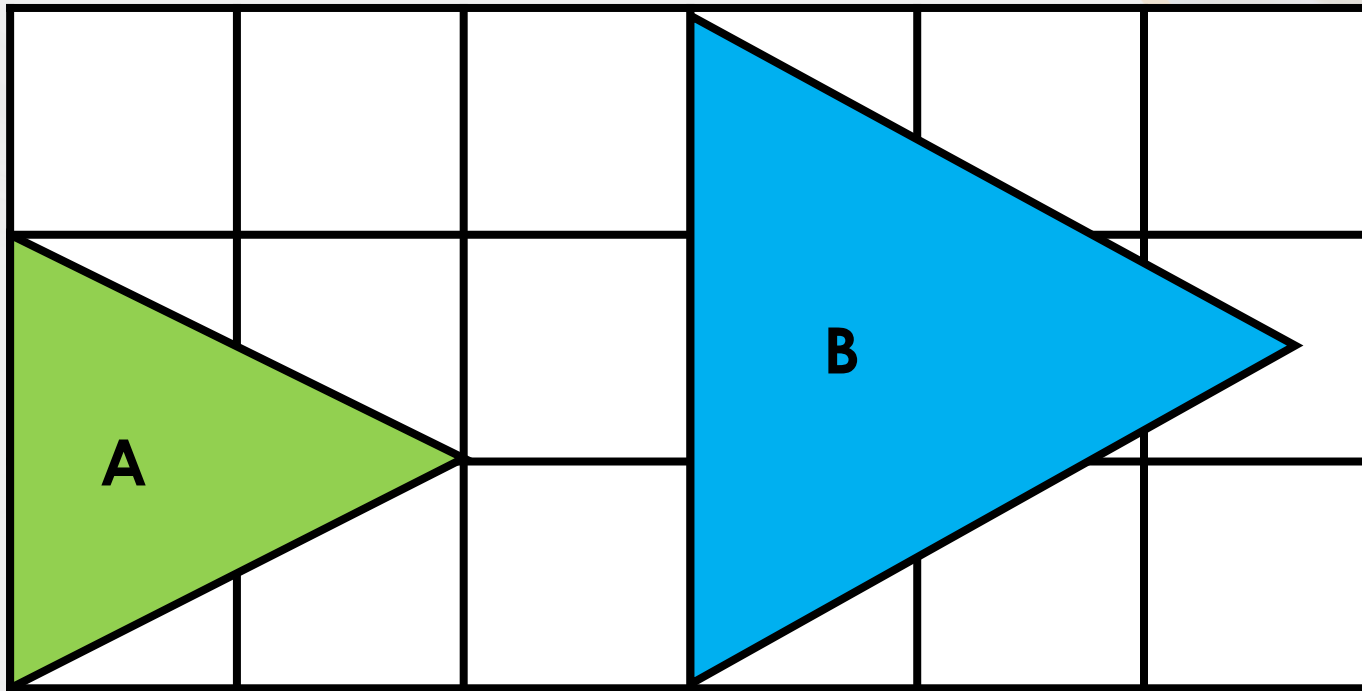
True or false?
Shape A has been increased by a scale factor of 2.



Varied Fluency 4

True or false?

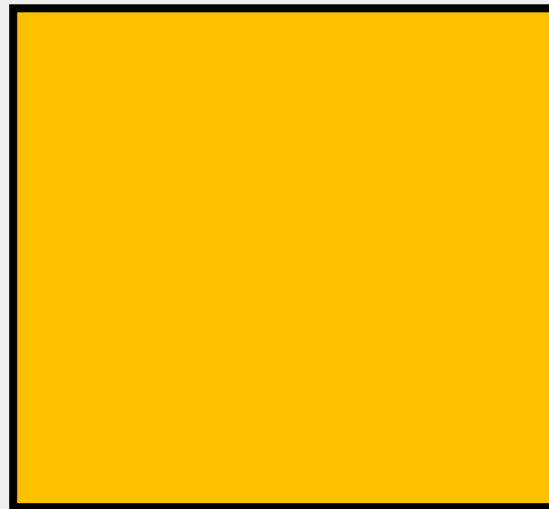
Shape A has been increased by a scale factor of 2.



False. It has been increased by a scale factor of 1.5.

Problem Solving 1

This shape has been enlarged by a scale factor of 3. Find the perimeter of the original shape.



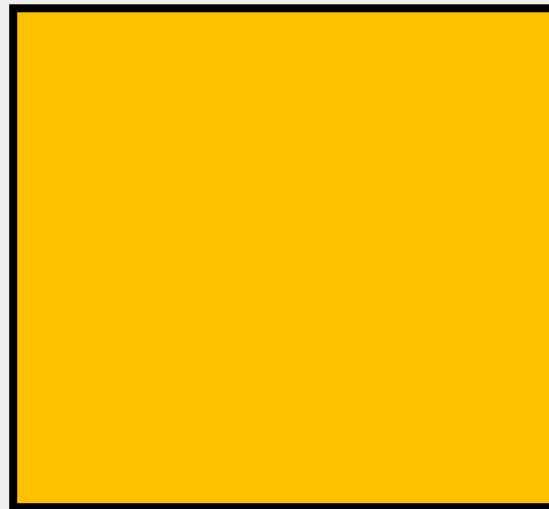
6.6cm

7.2cm

Not to scale

Problem Solving 1

This shape has been enlarged by a scale factor of 3. Find the perimeter of the original shape.



6.6cm

7.2cm

9.2cm

Not to scale

Reasoning 1

Caitlin says,



If I increase the shape by a scale factor of 2.5, the new perimeter will be 56cm.

6.4cm



4.8cm

Is she correct?

Not to scale

Reasoning 1

Caitlin says,



If I increase the shape by a scale factor of 2.5, the new perimeter will be 56cm.

6.4cm



4.8cm

Is she correct?

Yes because...

Not to scale

Reasoning 1

Caitlin says,



If I increase the shape by a scale factor of 2.5, the new perimeter will be 56cm.

6.4cm



4.8cm

Is she correct?

Yes because the perimeter of the original shape is 22.4cm.

$$22.4 \times 2.5 = 56$$

Not to scale

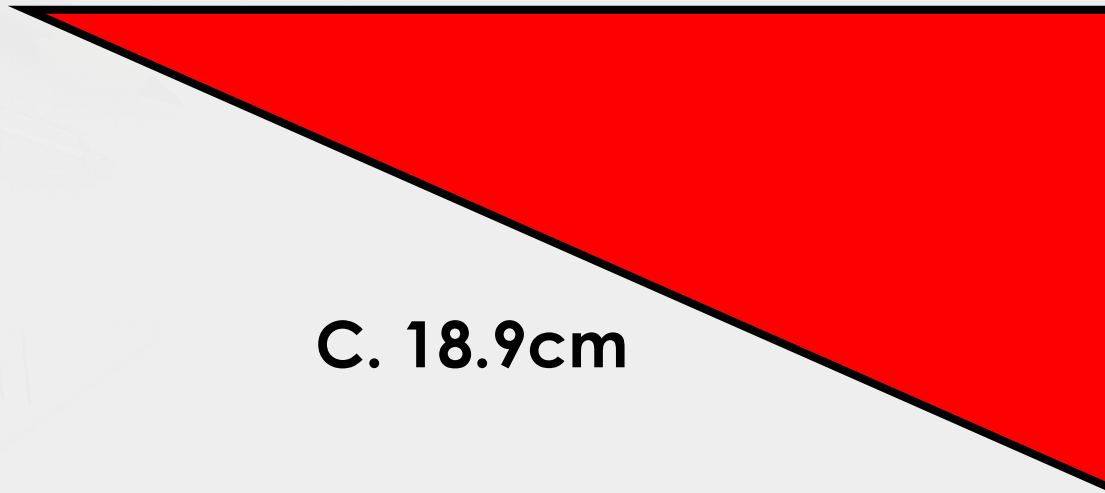
Problem Solving 2

This triangle was enlarged by a scale factor of three.

A. 15.3cm

B. 7.2cm

C. 18.9cm



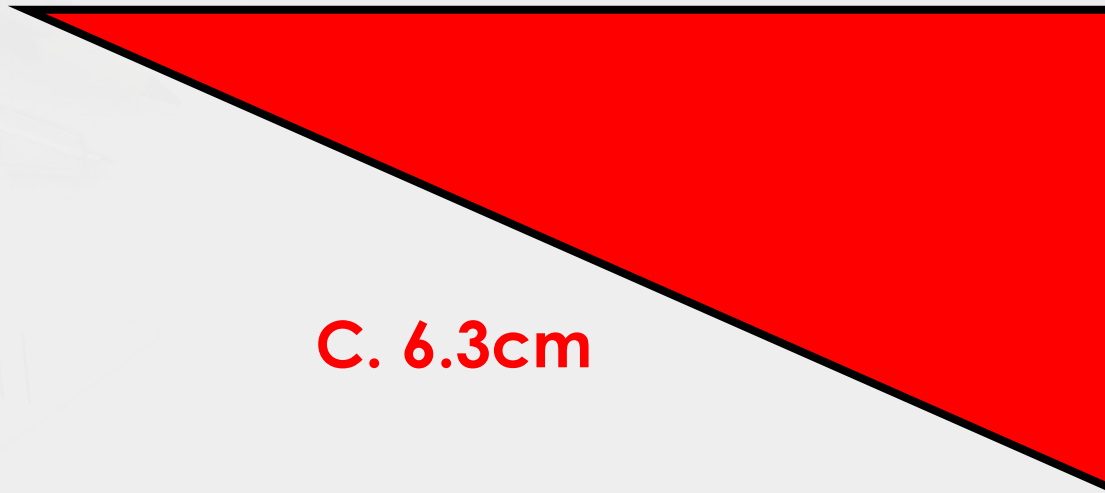
What were the measurements of the original triangle?

Not to scale

Problem Solving 2

This triangle was enlarged by a scale factor of three.

A. 5.1cm



B. 2.4cm

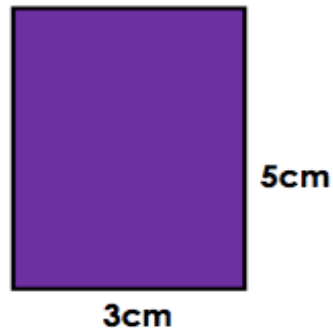
C. 6.3cm

What were the measurements of the original triangle?

Not to scale

Year 5 and Year 6 Developing

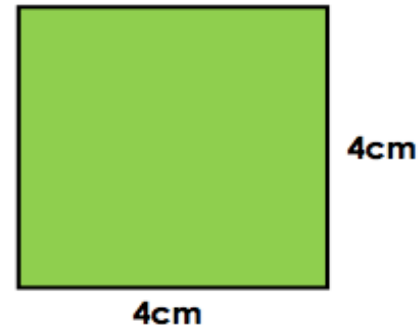
1a. Enlarge this shape by a scale factor of 3.



Not to scale

6 VF

1b. Enlarge this shape by a scale factor of 4.



Not to scale

6 VF

2a. Rebecca says,



A scale factor of two means you multiply each side of the original shape by two.

Is she correct?



6 VF

2b. Nasir says,



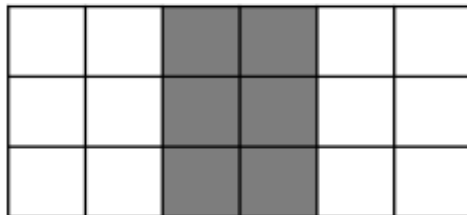
A scale factor of three means the new shape is twice as big as the original shape.

Is he correct?

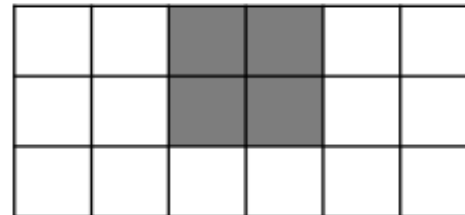


6 VF

3a. Copy this shape onto squared paper. Draw it using a scale factor of 2.



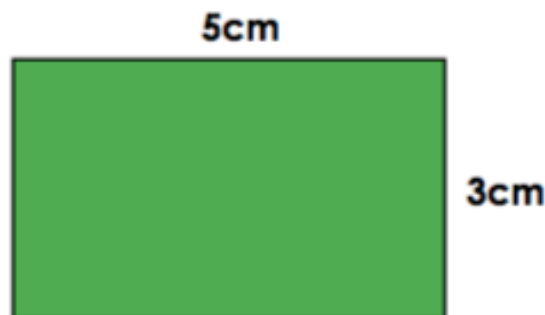
3b. Copy this shape onto squared paper. Draw it using a scale factor of 3.



2a. Sarah says,



If I enlarge the shape by a scale factor of 2, the new perimeter will be 48cm.



Is she correct? Explain your answer.



Not to scale

6 R

2b. Laurie says,



If I enlarge the shape by a scale factor of 3, the new perimeter will be 54cm.



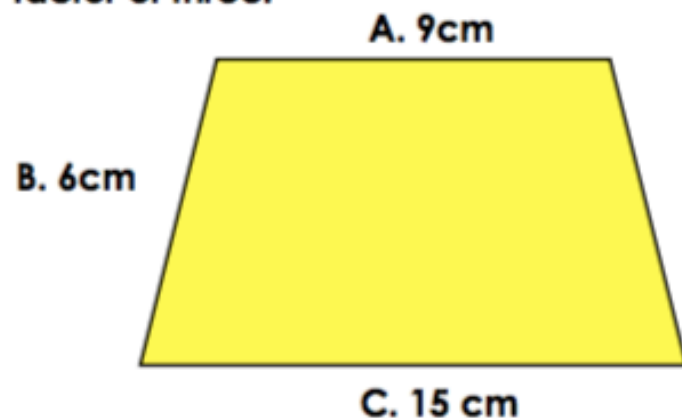
Is he correct? Explain your answer.



Not to scale

6 R

3a. This shape was enlarged by a scale factor of three.



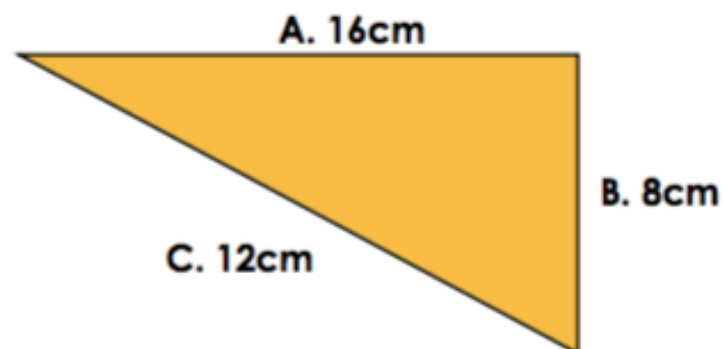
What were the measurements of the original shape?



Not to scale

6 PS

3b. This triangle was enlarged by a scale factor of four.



What were the measurements of the original triangle?

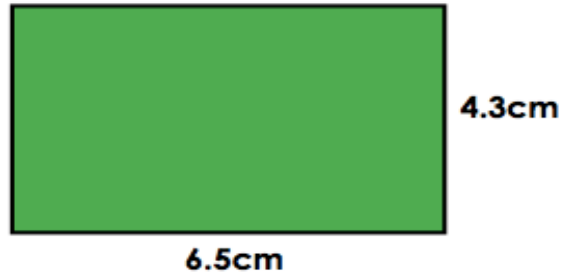


Not to scale

6 PS

Year 6 Expected

5a. Enlarge this shape by a scale factor of 2.



Not to scale

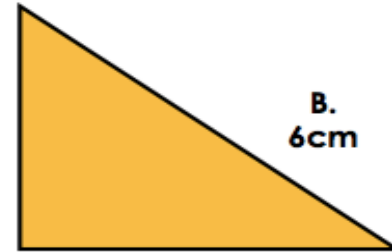
6 VF

5b. Enlarge this shape by a scale factor of 3.

A. 3.6cm

B. 6cm

C. 4.8cm



Not to scale

6 VF

6a. Jake says,



A scale factor of 3.5 means you multiply each side of the original shape by 3.5.

Is he correct?



6 VF

6b. Hannah says,



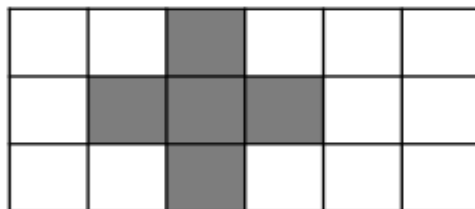
Only one side of a shape is enlarged when using a scale factor.

Is she correct?



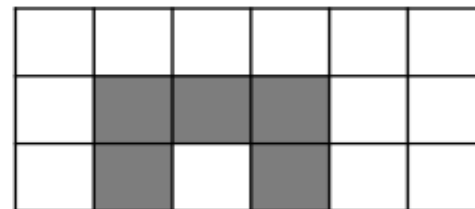
6 VF

7a. Copy this shape onto squared paper. Draw it using a scale factor of 3.



6 VF

7b. Copy this shape onto squared paper. Draw it using a scale factor of 2.

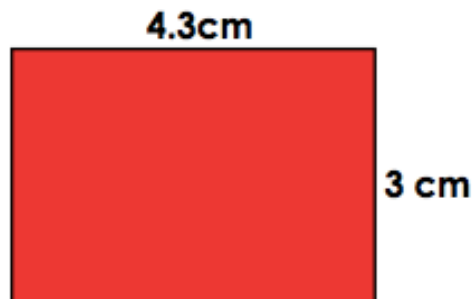


6 VF

5a. Mohammad says,



If I enlarge the shape by a scale factor of 4, the new perimeter will be 58.4cm.



Is he correct? Explain your answer.



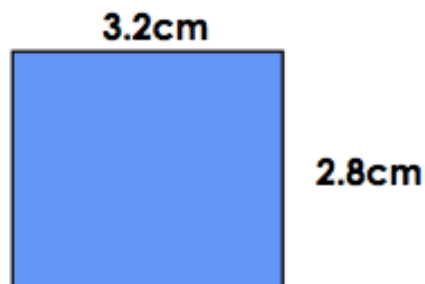
Not to scale

6 R

5b. Ciara says,



If I enlarge the shape by a scale factor of 4, the new perimeter would be 60cm.



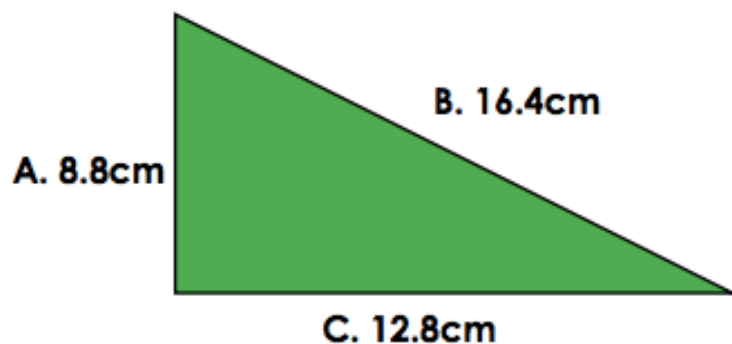
Is she correct? Explain your answer.



Not to scale

6 R

6a. This triangle was enlarged by a scale factor of four.



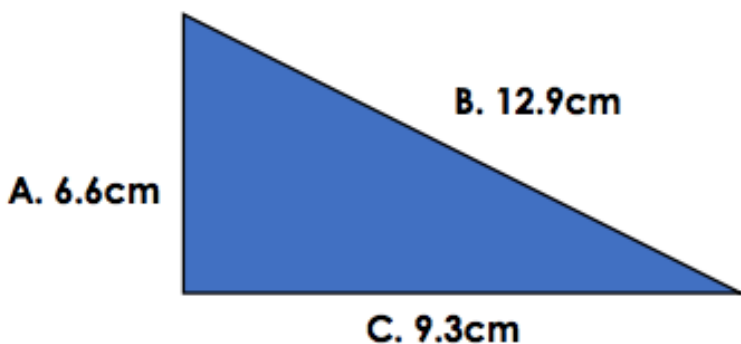
What were the measurements of the original triangle?



Not to scale

6 PS

6b. This triangle was enlarged by a scale factor of three.



What were the measurements of the original triangle?

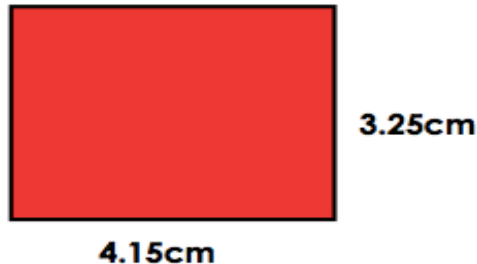


Not to scale

6 PS

Year 6 Greater Depth

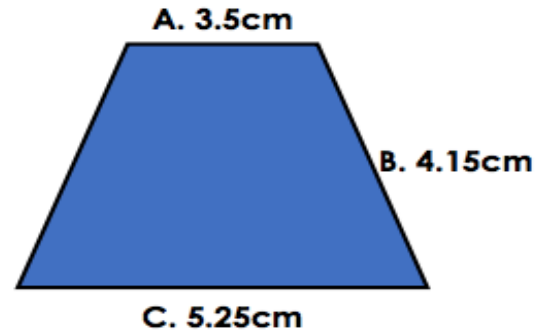
9a. Enlarge this shape by a scale factor of 3.



Not to scale

6 VF

9b. Enlarge this shape by a scale factor of 2.



Not to scale

6 VF

10a. Keeley says,



A scale of factor of 1.5 means you multiply each side of the original shape by 2.

Is she correct?



6 VF

10b. Khushal says,



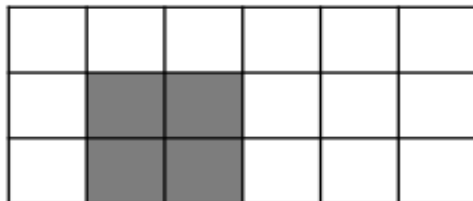
A scale factor of a half means each side of the original shape is halved.

Is he correct?

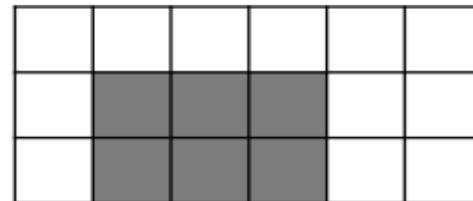


6 VF

11a. Copy this shape onto squared paper. Draw it using a scale factor of a half.



11b. Copy this shape onto squared paper. Draw it using a scale factor of 2.5.



8a. Ashleigh says,



If I enlarge the shape by a scale factor of 3.5, the new area will be 112.7cm^2 .



Is she correct? Explain your answer.



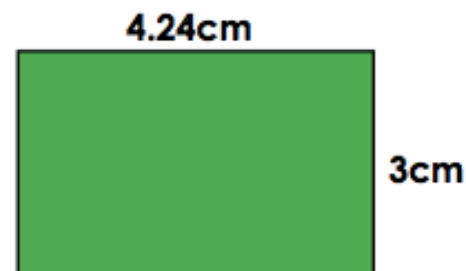
Not to scale

6 R

8b. Roberto says,



If I enlarge the shape by a scale factor of 2.5, the new area will be 50.88cm^2 .



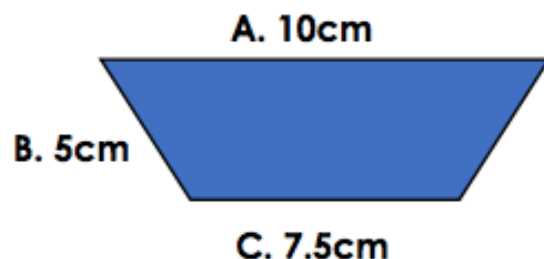
Is he correct? Explain your answer.



Not to scale

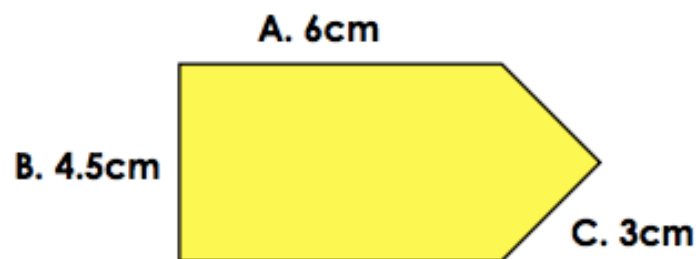
6 R

9a. This shape was enlarged by a scale factor of 2.5.



What were the measurements of the original shape?

9b. This shape was enlarged by a scale factor of 1.5.



What were the measurements of the original triangle?