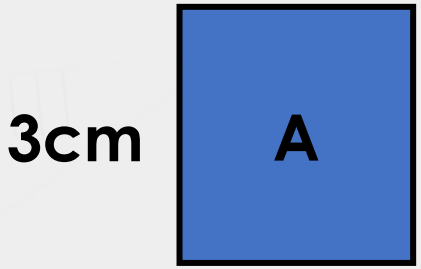
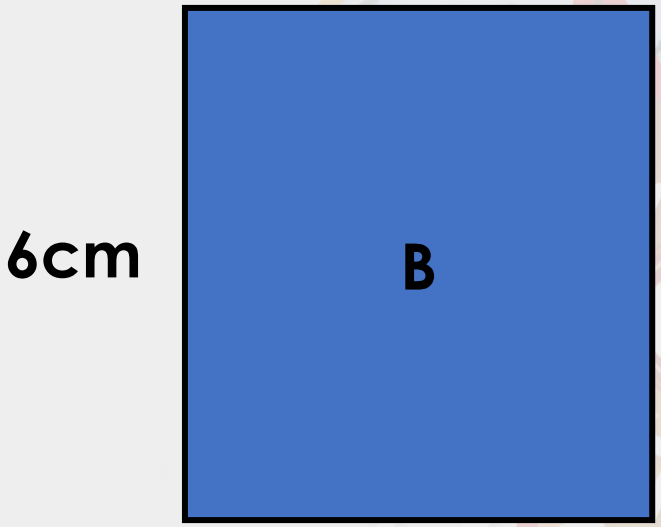
Wednesday 24th June
Year 5/6: Calculating Scale Factors

Introduction

Maeve says,

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





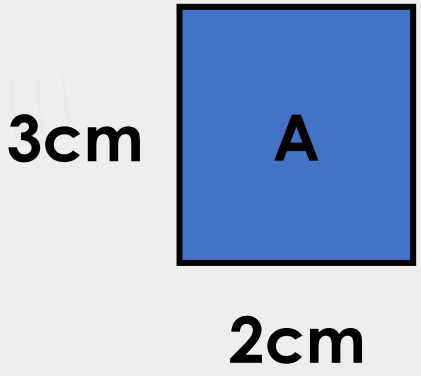
Is she correct? Explain your answer.

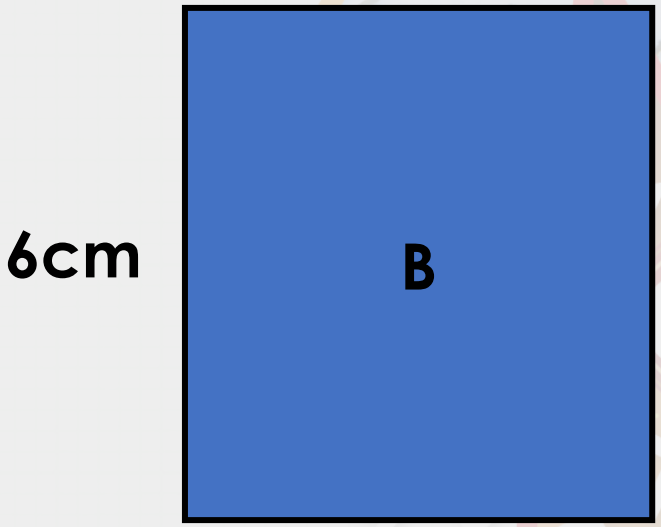
Not to scale

Introduction

Maeve says,

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





Is she correct? Explain your answer.

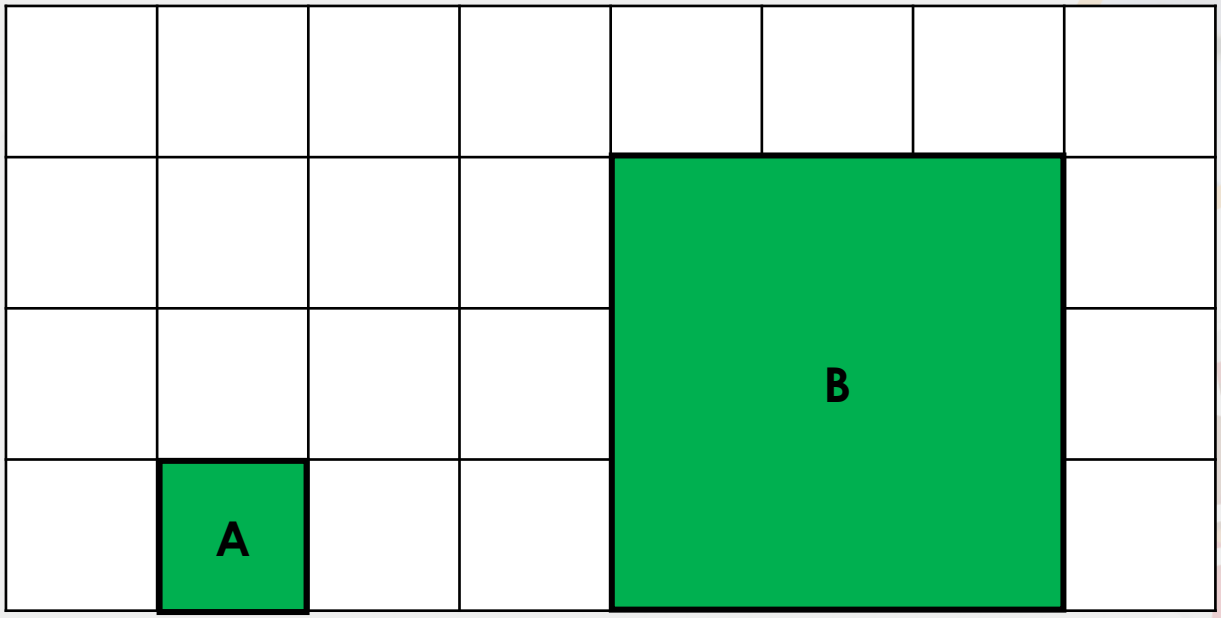
No because it has been enlarged by a scale factor of 2 not 4.

Not to scale

Varied Fluency 1

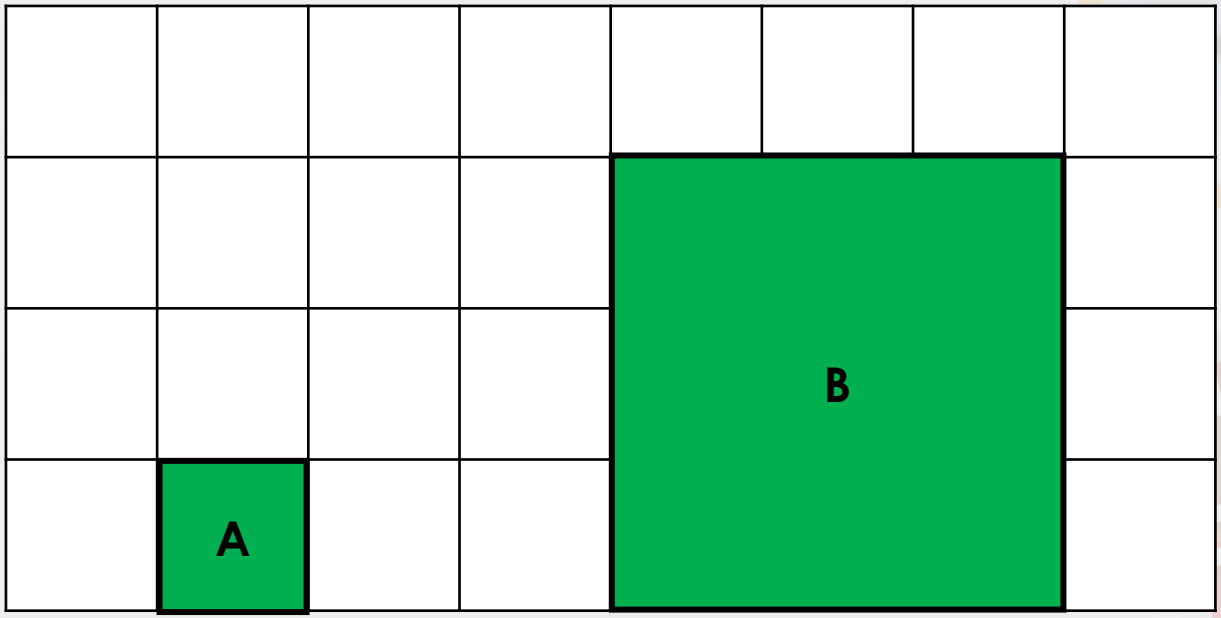
True or false?

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



Varied Fluency 1

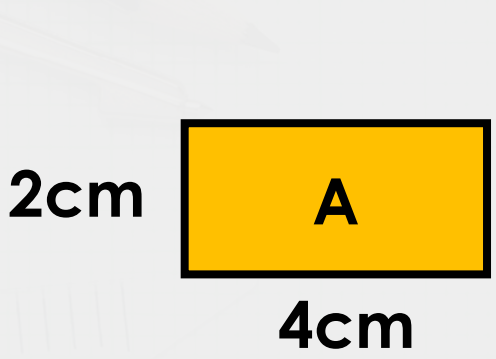
True or false?
Shape A has been increased by a scale factor of 2.5 to create shape B.

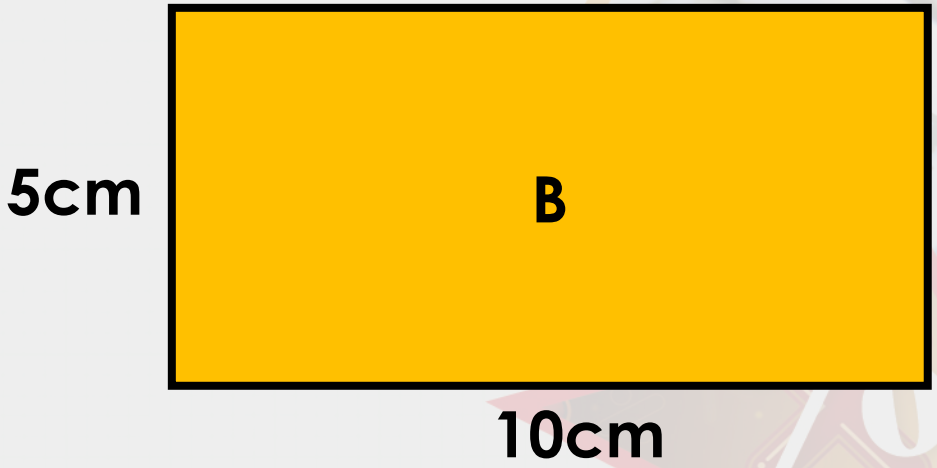


False. It has been increased by a scale factor of 3.

Varied Fluency 2

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



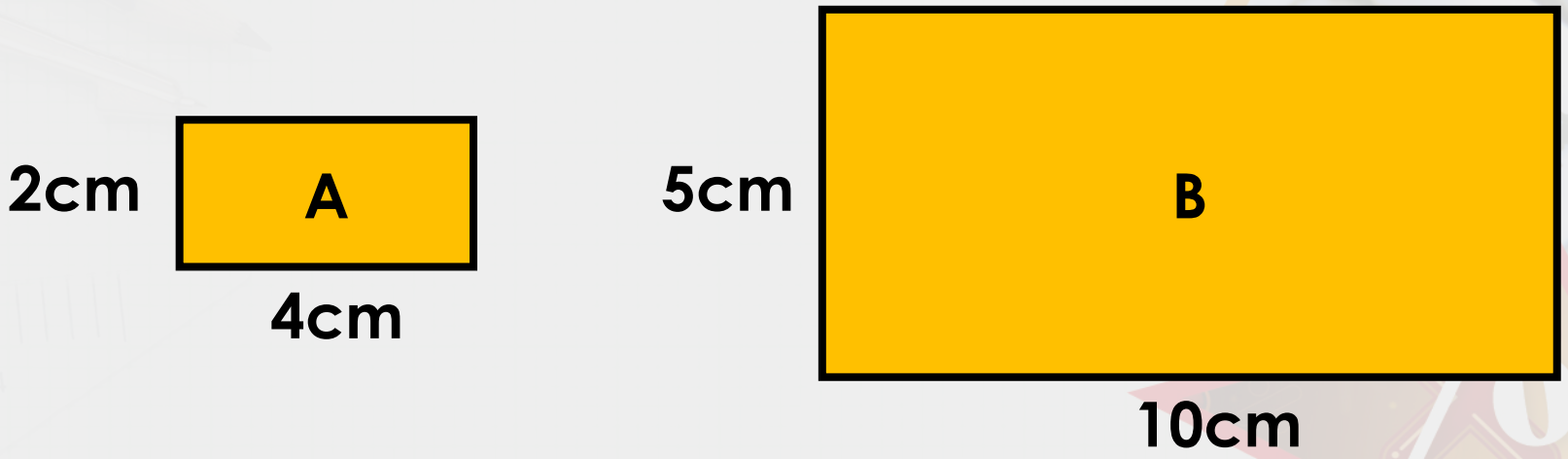


Is she correct?

Not to scale

Varied Fluency 2

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



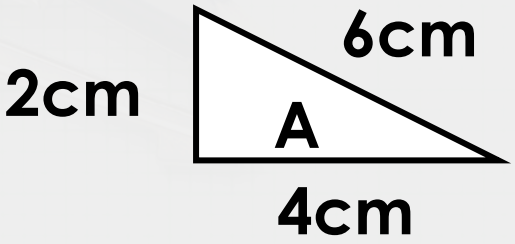
Is she correct?

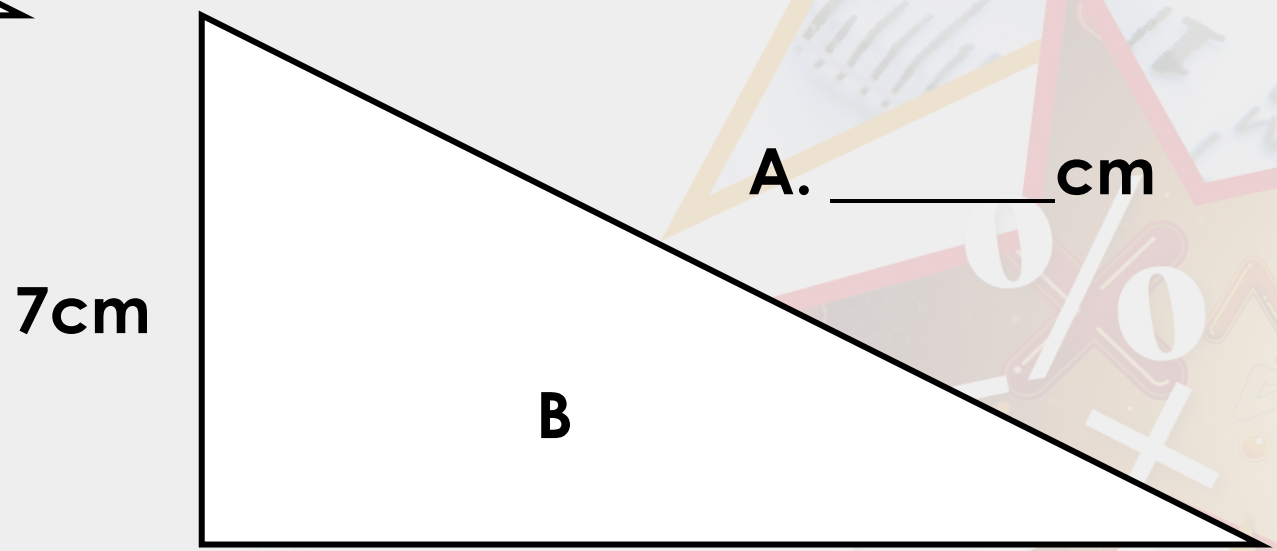
Yes, each measurement is 2.5 times its original size.

Not to scale

Varied Fluency 3

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





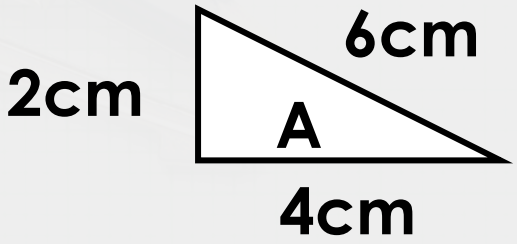
A. _____cm

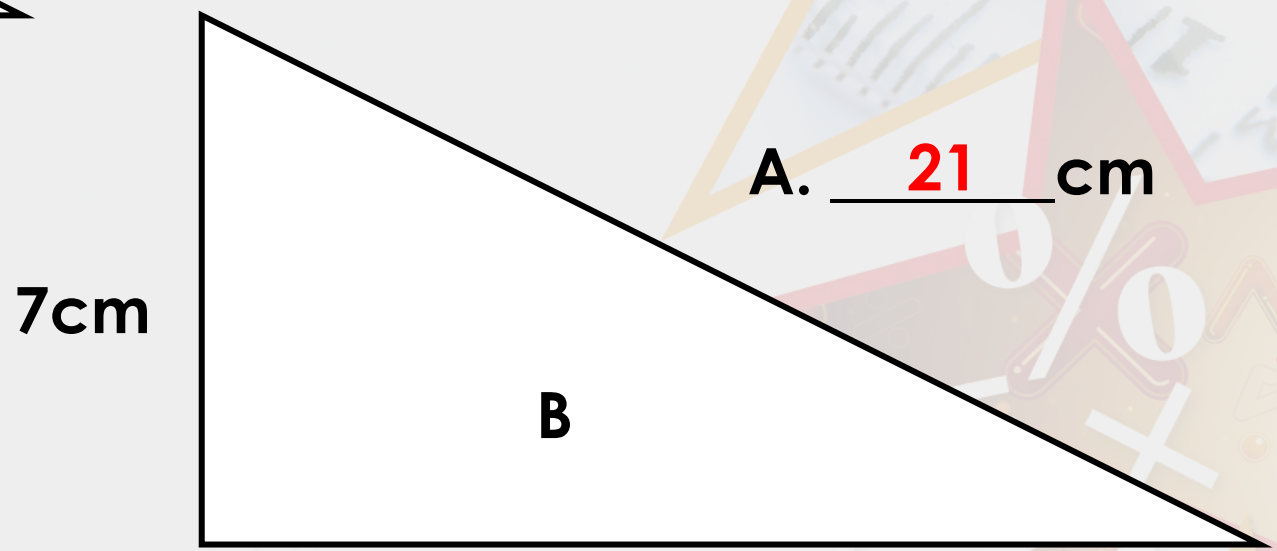
B. _____cm

Not to scale

Varied Fluency 3

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





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.

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

Problem Solving 1

A rectangle has been enlarged to create shape B. Using the clues below, identify which scale factor has been used.

Shape B has an area of 450cm².

The length of the original rectangle is 12cm.

The perimeter of the original rectangle is 36cm.

Problem Solving 1

A rectangle has been enlarged to create shape B. Using the clues below, identify which scale factor has been used.

Shape B has an area of 450cm².

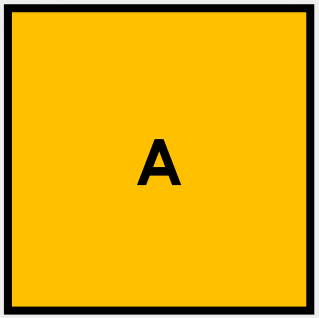
The length of the original rectangle is 12cm.

The perimeter of the original rectangle is 36cm.

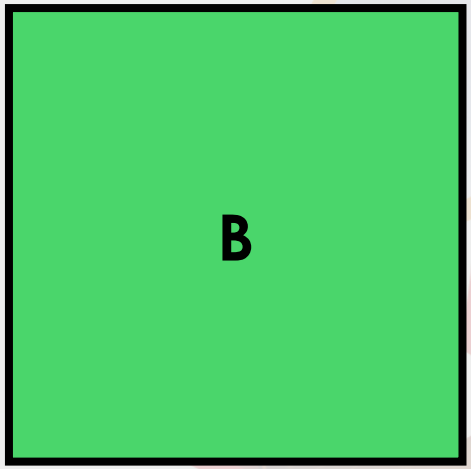
Scale factor of 2.5

Reasoning 1

Kayla has increased shape A to create shape B. She says if she created shape C using the same scale factor, one side would have a length of 8cm.



4cm



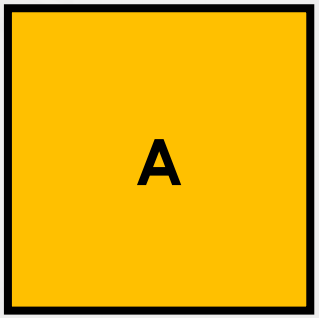
6cm

Do you agree? Explain your answer.

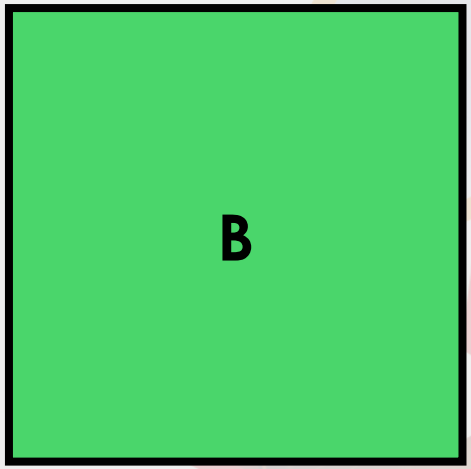
Not to scale

Reasoning 1

Kayla has increased shape A to create shape B. She says if she created shape C using the same scale factor, one side would have a length of 8cm.



4cm



6cm

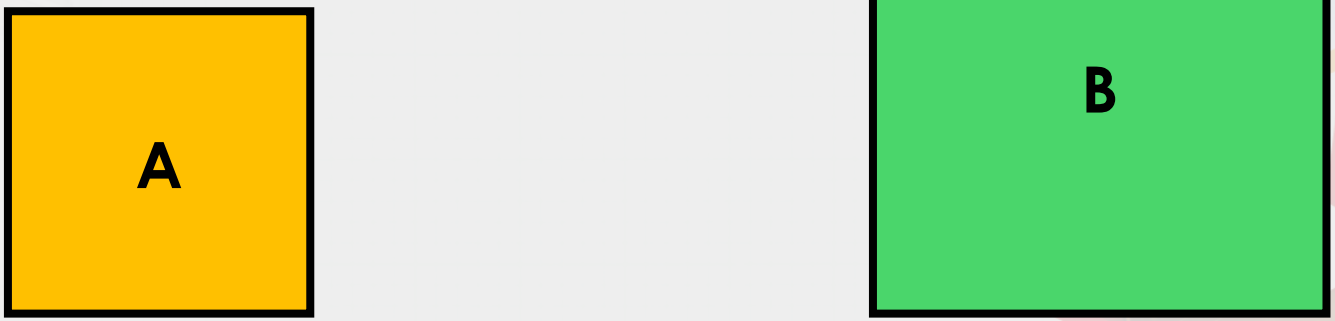
Do you agree? Explain your answer.

No because…

Not to scale

Reasoning 1

Kayla has increased shape A to create shape B. She says if she created shape C using the same scale factor, one side would have a length of 8cm.



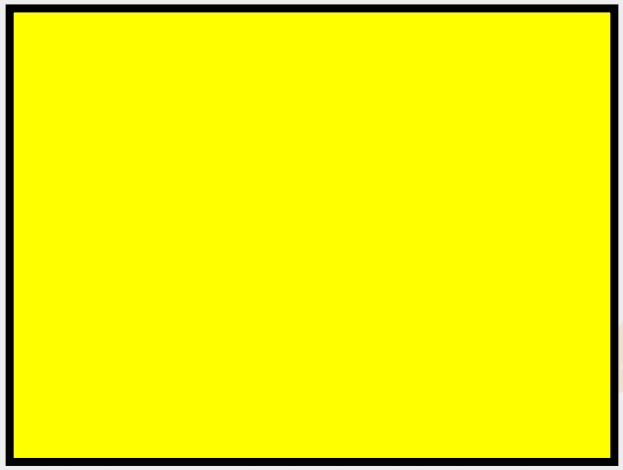
Do you agree? Explain your answer.

No because the scale factor used is 1.5. If she calculates 6 x 1.5, she would have one side of the square as 9cm.

Not to scale

Reasoning 2

When enlarged, the perimeter of the rectangle below increases to 70cm.

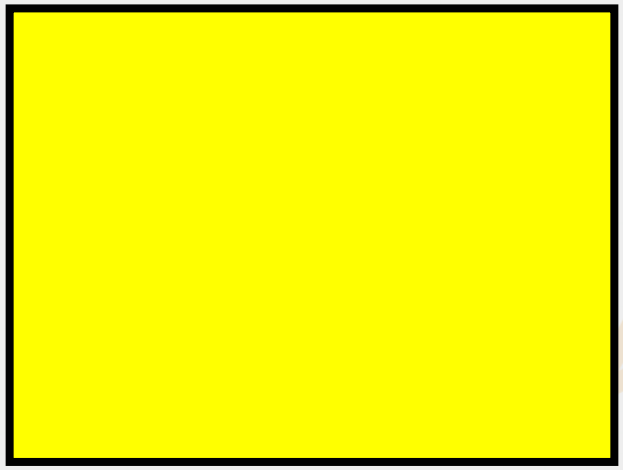


What scale factor has the shape been increased by? Explain your answer.

Not to scale

Reasoning 2

When enlarged, the perimeter of the rectangle below increases to 70cm.

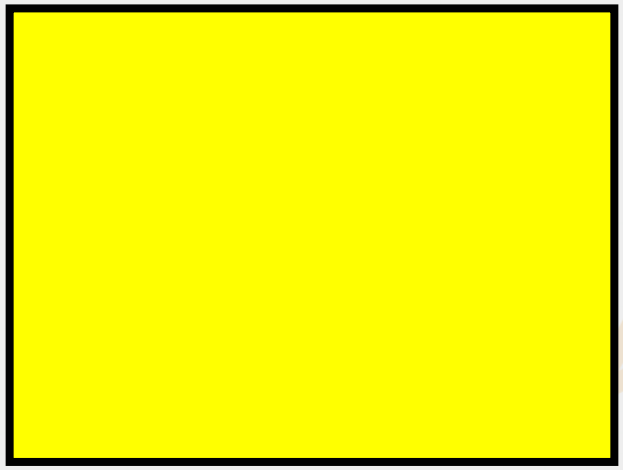


What scale factor has the shape been increased by?
Explain your answer.
The original perimeter of the shape is 28cm, so…

Not to scale

Reasoning 2

When enlarged, the perimeter of the rectangle below increases to 70cm.



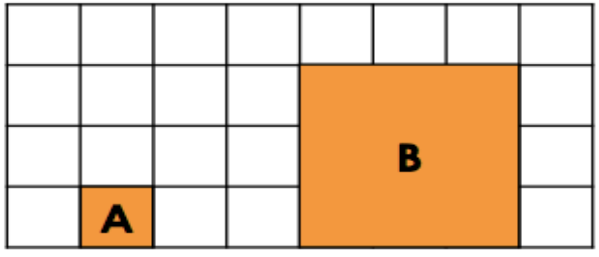
What scale factor has the shape been increased by?
Explain your answer.

The original perimeter of the shape is 28cm, so the shape has been increased by a scale factor of 2.5. 28 x 2.5 = 70cm.

Not to scale

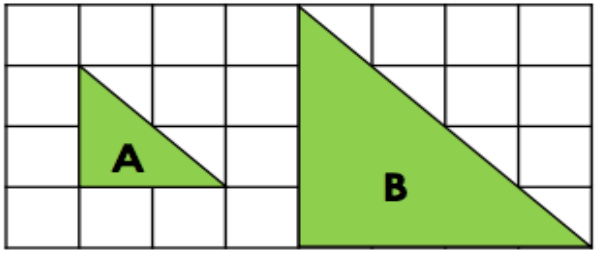
Year 5 and Year 6 Developing

1a. Complete the sentence below. Shape A has been increased by a scale factor of _____ to create shape B.



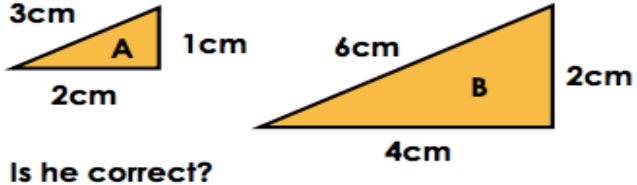
D 6 VF

1b. Complete the sentence below. Shape A has been increased by a scale factor of _____ to create shape B.



D 6 VF

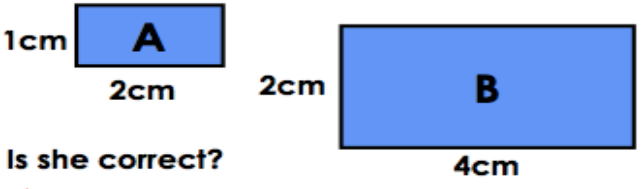
2a. Will says he has enlarged his shape by a scale factor of 2. Shape B is his new shape.



Is he correct?

D *not to scale* 6 VF

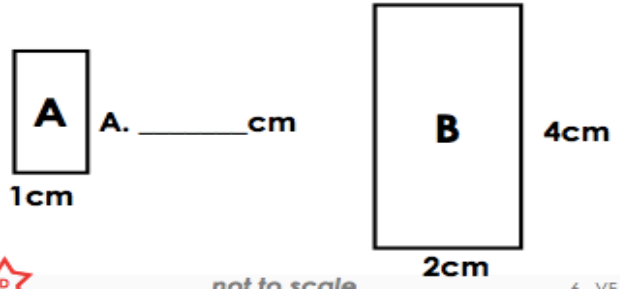
2b. Annie says she has enlarged her shape by a scale factor of 3. Shape B is her new shape.



Is she correct?

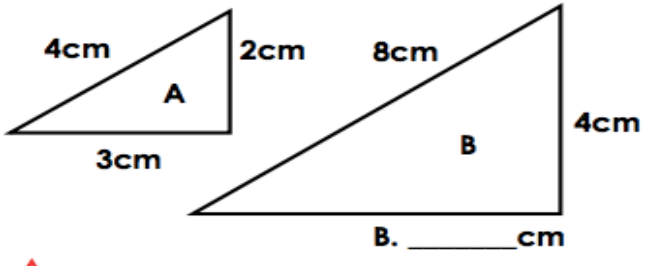
D *not to scale* 6 VF

3a. Rectangle B has been scaled from rectangle A. Find the missing length.



D *not to scale* 6 VF

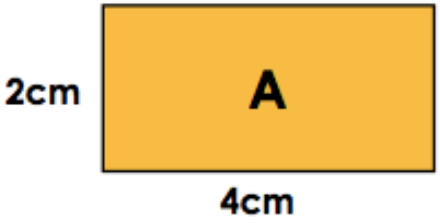
3b. Triangle B has been scaled from triangle A. Find the missing length.



D *not to scale* 6 VF

1a. Shape A has been enlarged to create shape B.

Shape B has a perimeter of 48cm.



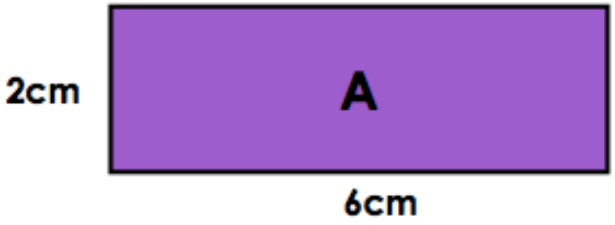
Identify which scale factor has been used.

D

not to scale

1b. Shape A has been enlarged to create shape B.

Shape B has a perimeter of 80cm.

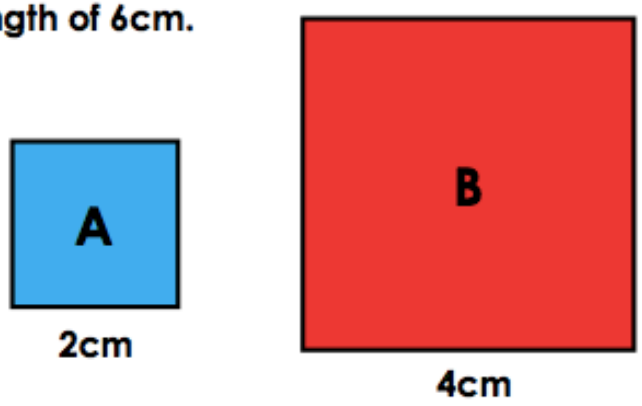


Identify which scale factor has been used.

D

not to scale

2a. Sharon is enlarging shapes by a scale factor of 2 each time. She says that if she created shape C, one side would have a length of 6cm.

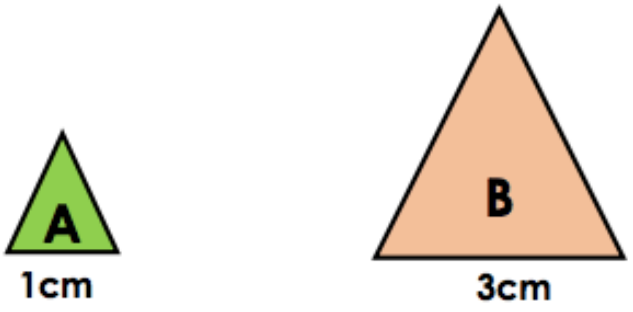


Do you agree? Explain your answer.

D

not to scale

3b. Kayden is enlarging shapes by a factor of 3 each time. He says if he created shape C, one side would have a length of 9cm.



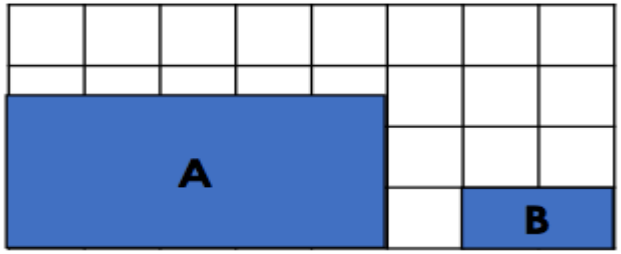
Do you agree? Explain your answer.

D

not to scale

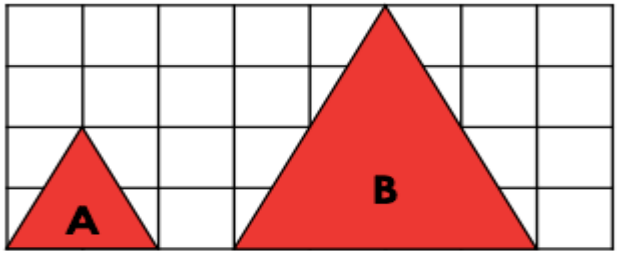
Year 6 Expected

5a. True or false?
Shape B has been increased by a scale factor of 2.5 to create shape A.



6 VF

5b. True or false?
Shape A has been increased by a scale factor of 3 to create shape B.



6 VF

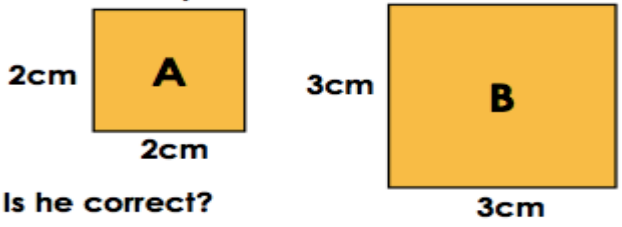
6a. Evelyn says she has enlarged her shape by a scale factor of 2.5. Shape B is her new shape.

Is she correct?

not to scale

6 VF

6b. Dominic says he has enlarged his shape by a scale factor of 1.5. Shape B is his new shape.

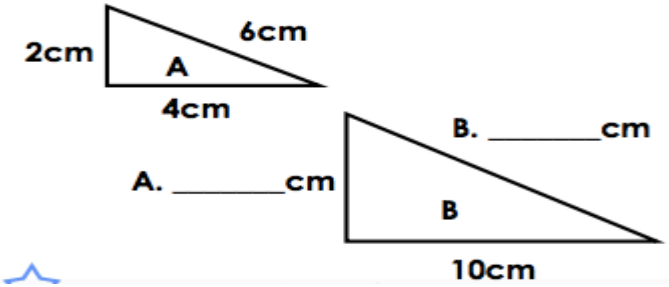


Is he correct?

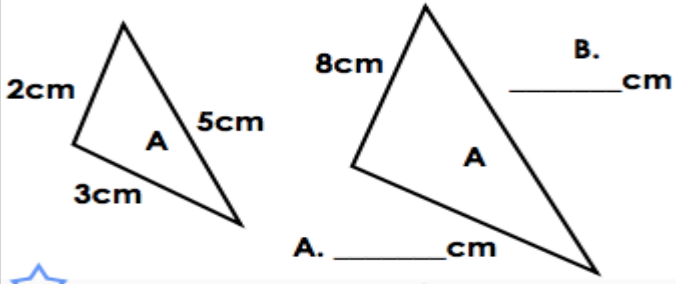
not to scale

6 VF

7a. Triangle B has been scaled from triangle A. Find the missing lengths.



7b. Triangle B has been scaled from triangle A. Find the missing lengths.



4a. A rectangle has been enlarged to create shape B. Using the clues below, identify which scale factor has been used.

Shape B has an area of 54cm².

The length of the original rectangle is 6cm.

The perimeter of the original rectangle is 20cm.

E

6 PS

4b. A rectangle has been enlarged to create shape B. Using the clues below, identify which scale factor has been used.

Shape B has an area of 50cm².

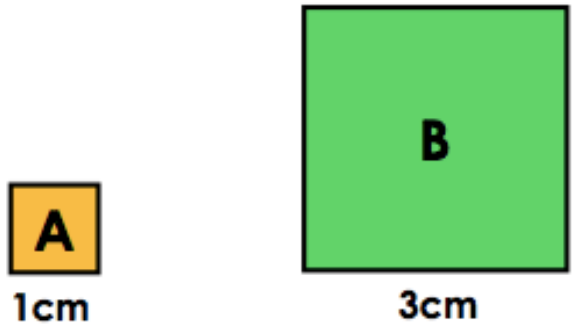
The length of the original rectangle is 4cm.

The perimeter of the original rectangle is 12cm.

E

6 PS

5a. Eleanor has enlarged shape A to create shape B. She says if she created shape C using the same scale factor, one side would have a length of 5cm.



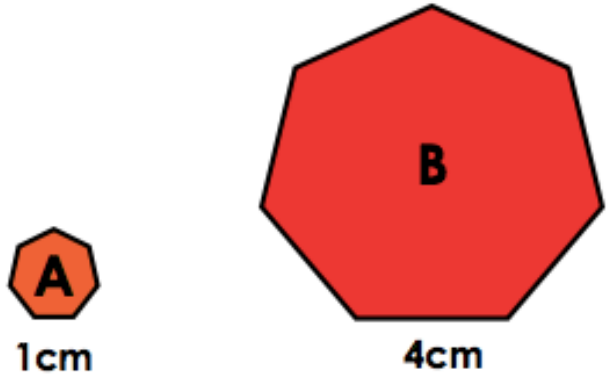
Do you agree? Explain your answer.

E

not to scale

4 R

5b. Bobby has enlarged shape A to create shape B. He says if he created shape C using the same scale factor, one side would have a length of 8cm.



Do you agree? Explain your answer.

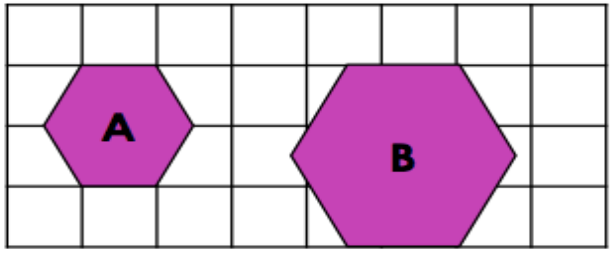
E

not to scale

4 R

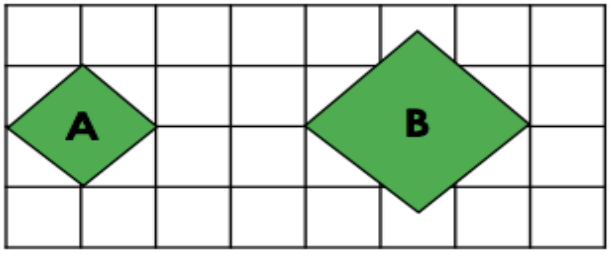
Year 6 Greater Depth

9a. True or false?
Shape A has been increased by a scale factor of 2 to create shape B.



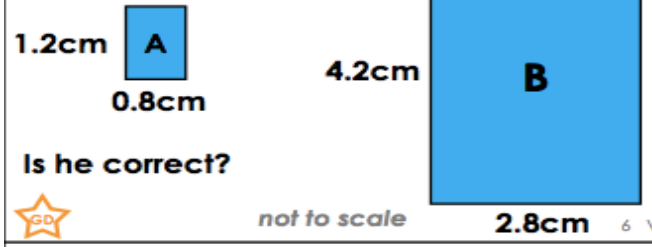
6 VF

9b. True or false?
Shape A has been increased by a scale factor of 1.5 to create shape B.



6 VF

10a. Ashton says he has enlarged his shape by a scale factor of 3.5. Shape B is his new shape.

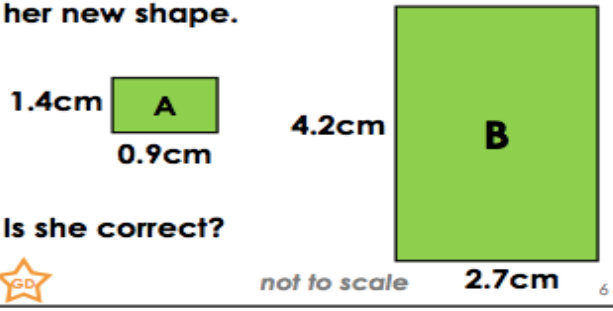


Is he correct?

not to scale

6 VF

10b. Tayyeba says she has enlarged her shape by a scale factor of 2.5. Shape B is her new shape.

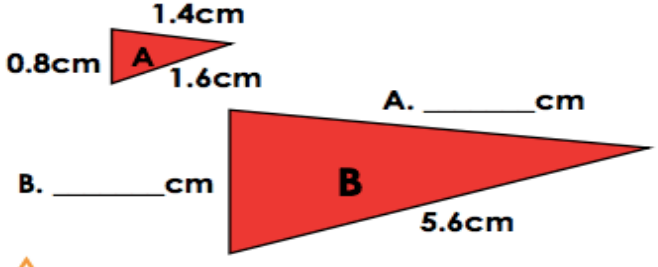


Is she correct?

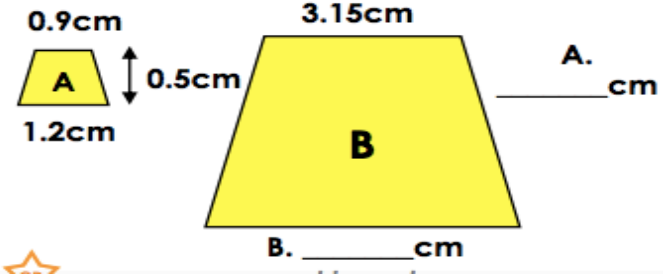
not to scale

6 VF

11a. Shape B has been scaled from shape A. Find the missing lengths.



11b. Shape B has been scaled from shape A. Find the missing measurements.



7a. A square has been enlarged to create shape B. Using the clues below, identify which scale factor has been used.

The area of the original square is 6.25cm².

The perimeter of shape B is 25cm.

GD

6 PS

7b. A square has been enlarged to create shape B. Using the clues below, identify which scale factor has been used.

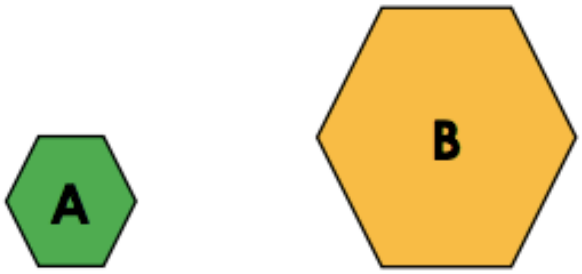
The perimeter of the original square is 7.2cm.

The area of shape B is 7.29cm².

GD

6 PS

8a. Jonny has enlarged shape A to create shape B. He says if he created shape C using the same scale factor, one side would have a length of 4.5cm.



Do you agree? Explain your answer.

8b. Amanda has enlarged shape A to create shape B. She says if she created shape C using the same scale factor, one side would have a length of 7.2cm.

Do you agree? Explain your answer.