

Varied Fluency

Step 6: Calculating Scale Factors

National Curriculum Objectives:

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

Differentiation:

Developing Questions to support calculating scale factors. Involving whole numbers only.

Expected Questions to support calculating scale factors. Involving whole numbers in measurements but some scaled factors can increase by a half.

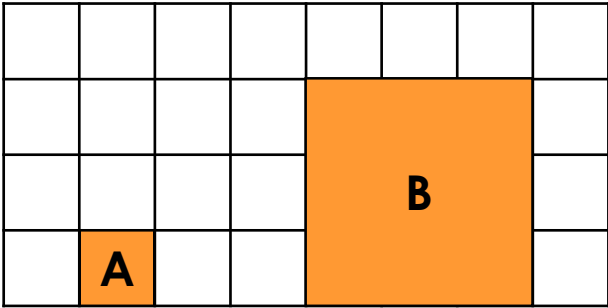
Greater Depth Questions to support calculating scale factors. Involving some decimals in measurements and some scaled factors can increase by a half.

More [Year 6 Ratio](#) resources.

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Calculating Scale Factors

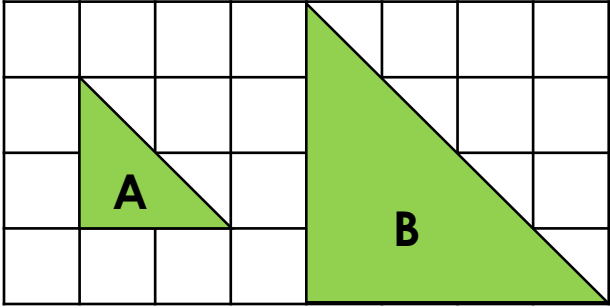
1a. Complete the sentence below.
Shape A has been increased by a scale factor of _____ to create shape B.



VF

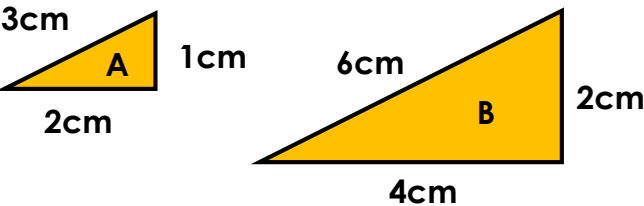
Calculating Scale Factors

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



VF

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



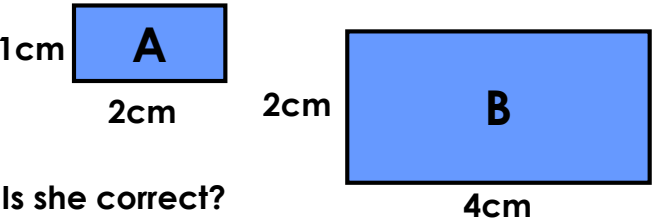
Is he correct?



not to scale

VF

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



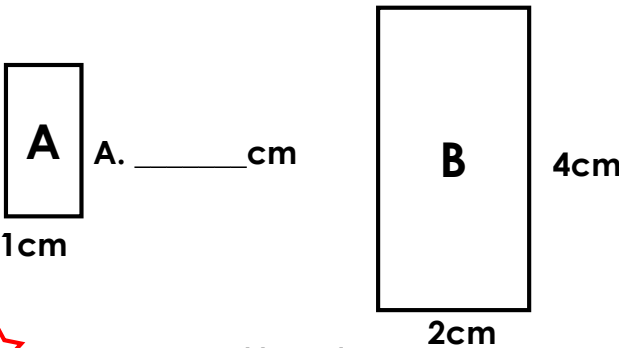
Is she correct?



not to scale

VF

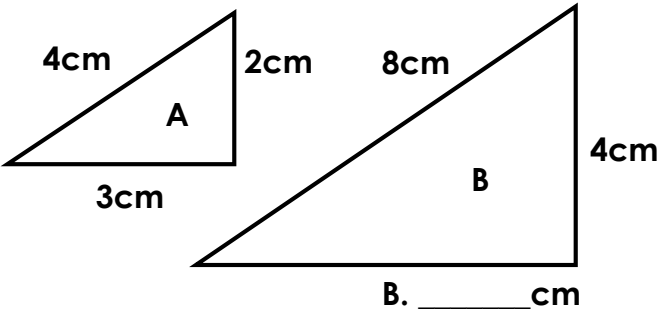
3a. Rectangle B has been scaled from rectangle A. Find the missing length.



not to scale

VF

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



not to scale

VF

4a. Square B and C have been scaled from square A. Complete the table.

Square	Length of side	Scale Factor
A	2cm	-
B	?	3
C	12cm	?



VF

4b. Square B and C have been scaled from square A. Complete the table.

Square	Length of side	Scale Factor
A	4cm	-
B	?	2
C	16cm	?

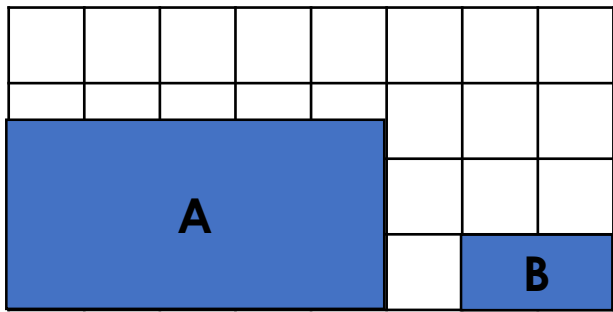


VF

Calculating Scale Factors

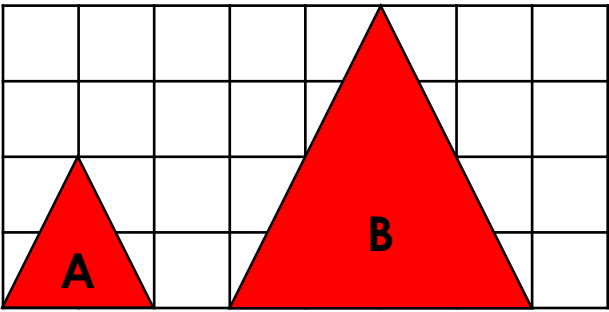
Calculating Scale Factors

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



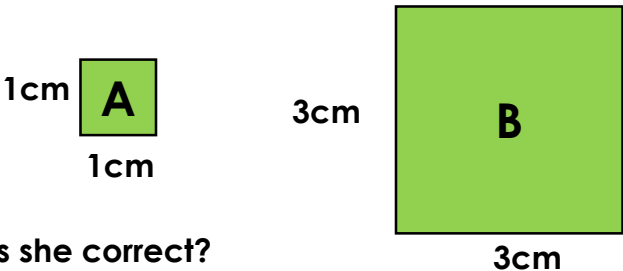
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5b. True or false?
Shape A has been increased by a scale factor of 3 to create shape B.



VF

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



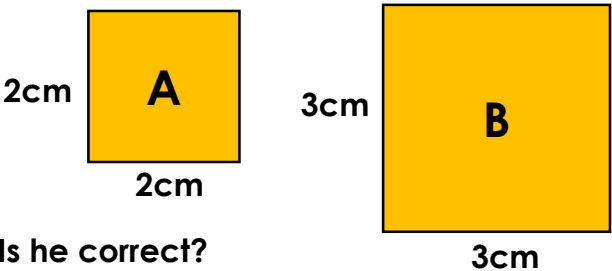
Is she correct?



not to scale

VF

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



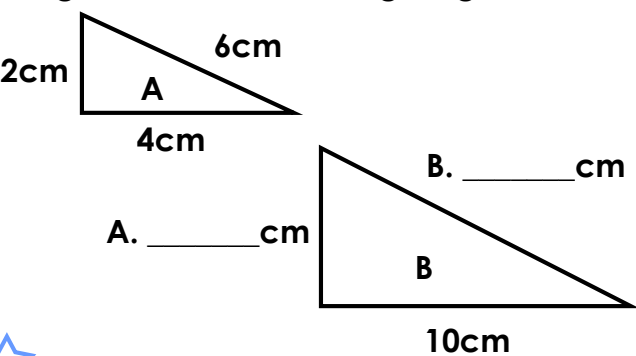
Is he correct?



not to scale

VF

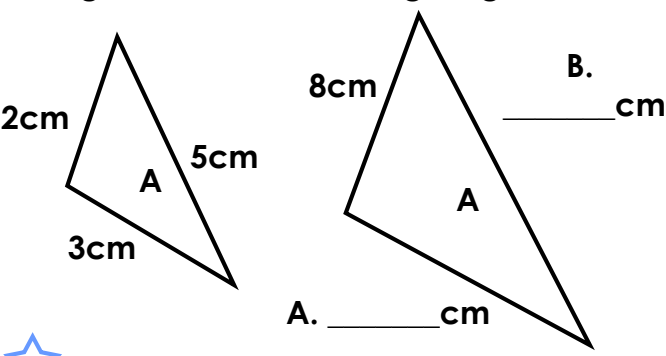
7a. Triangle B has been scaled from triangle A. Find the missing lengths.



not to scale

VF

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



not to scale

VF

8a. Square B and C have been scaled from square A. Complete the table.

Square	Length of side	Scale Factor
A	6cm	-
B	?	2.5
C	27cm	?



VF

8b. Square B and C have been scaled from square A. Complete the table.

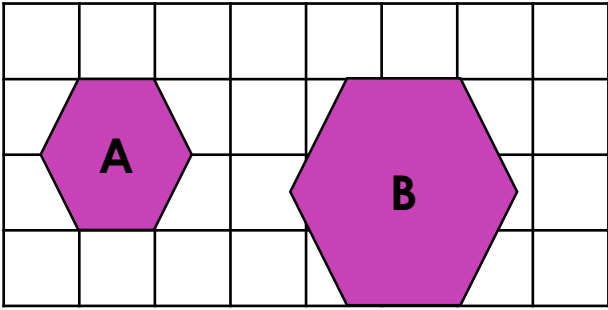
Square	Length of side	Scale Factor
A	8cm	-
B	?	3.5
C	52cm	?



VF

Calculating Scale Factors

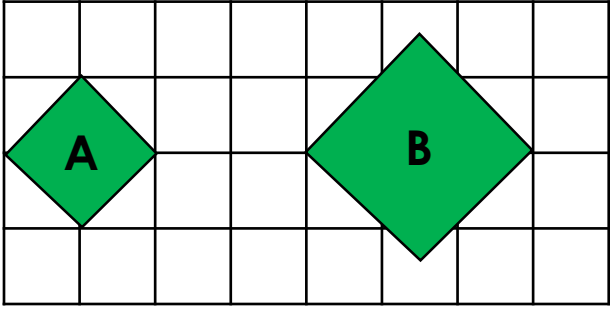
9a. True or false?
Shape A has been increased by a scale factor of 2 to create shape B.



VF

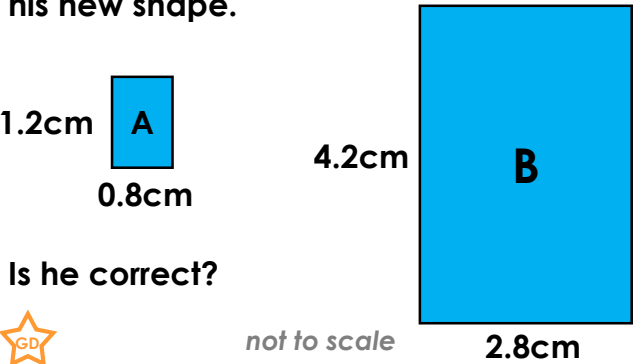
Calculating Scale Factors

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



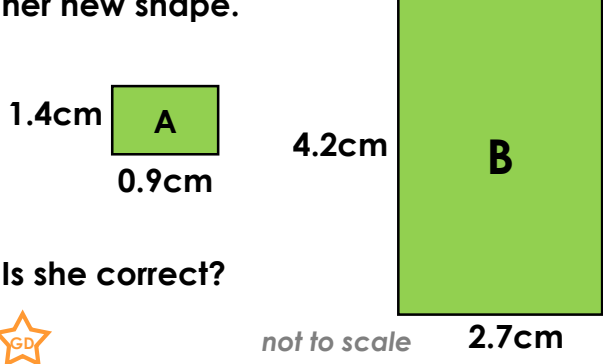
VF

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



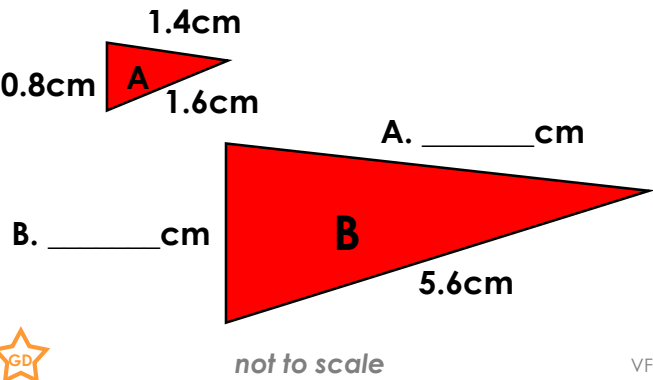
VF

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



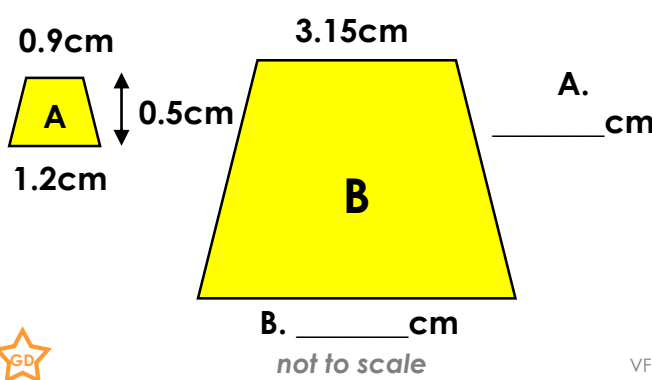
VF

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



VF

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



VF

12a. Square B and C have been scaled from square A. Complete the table.

Square	Length of side	Scale Factor
A	6.5cm	-
B	?	2.5
C	19.5cm	?



VF

12b. Square B and C have been scaled from square A. Complete the table.

Square	Length of side	Scale Factor
A	3.5cm	-
B	?	3.5
C	17.5cm	?



VF

Varied Fluency Calculating Scale Factors

Developing

- 1a. 3
- 2a. Yes
- 3a. A = 2cm
- 4a. B = 6cm; C = scale factor 6

Expected

- 5a. true
- 6a. No, she has used a scale factor of 3.
- 7a. A = 5cm; B = 15cm
- 8a. B = 15cm; C = scale factor 4.5

Greater Depth

- 9a. False. Shape A has been increased by a scale factor of 1.5 to create shape B.
- 10a. Yes, he is correct.
- 11a. A = 4.9cm; B = 2.8cm
- 12a. B = 16.25cm; C = scale factor 3

Varied Fluency Calculating Scale Factors

Developing

- 1b. 2
- 2b. No, shape A has increased by a scale factor of 2 to create shape B.
- 3b. B = 6cm
- 4b. B = 8cm; C = scale factor 4

Expected

- 5b. False, shape A has been increased by a scale factor of 2 to create shape B.
- 6b. Yes, he is correct.
- 7b. A = 12cm; B = 20cm
- 8b. B = 28cm; C = scale factor 6.5

Greater Depth

- 9b. true
- 10b. No, she has used a scale factor of 3.
- 11b. A = 1.75cm; B. 4.2cm
- 12b. B = 12.25cm; C = scale factor 5