7th Grade Math
Lesson: April 7

Learning Target:
Students will find scale factor and use it to enlarge a shape.

Let's Get Started:
Watch Video: Introduction to Scale Factors

VOCABULARY

- Scale Factor: The ratio of any two corresponding lengths in two similar geometric figures.
- Corresponding Angles: Angles in matching locations of two shapes.
- Congruent: Identical.
- Similar Figures: Two figures that have corresponding angles that are congruent AND corresponding side lengths that are proportional.

Practice:

If the distance on a map is 2 cm represents 50 meters, what is the scale factor?

a) 1 cm represents 20 meters (1:20)

b) 1 cm represents 30 meters (1:30)

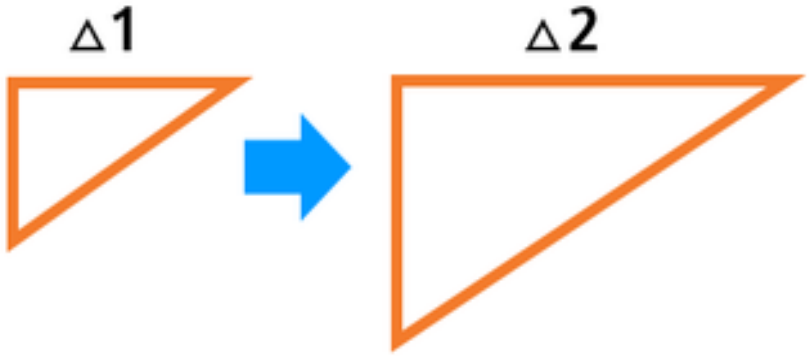
c) 1 cm represents 25 meters (1:25) Correct Answer

d) 1 cm represents 15 meters (1:15)

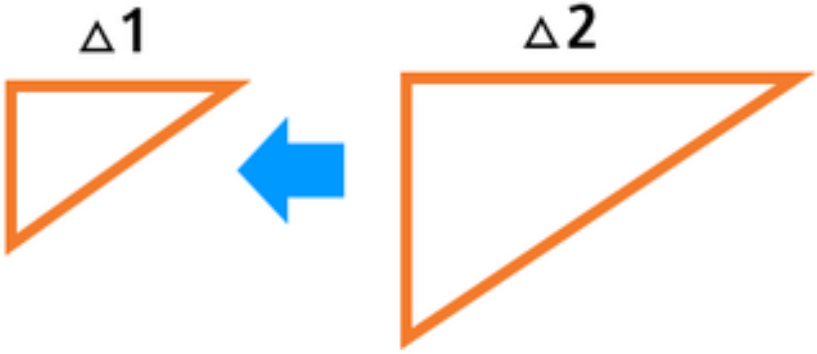
Using Scale Factors to Enlarge A Shape

Examples on the following slides:

The Order is Important!

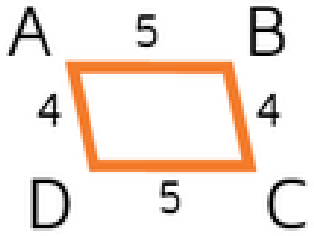


Getting Bigger:
The scale factor of △1 to △2 is larger than 1.

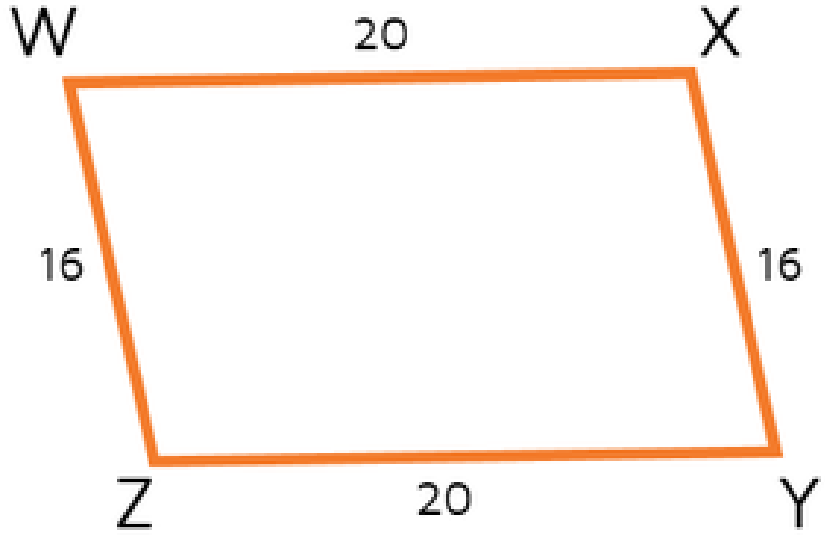


Getting Smaller:
The scale factor of △2 to △1 is a fraction smaller than 1.

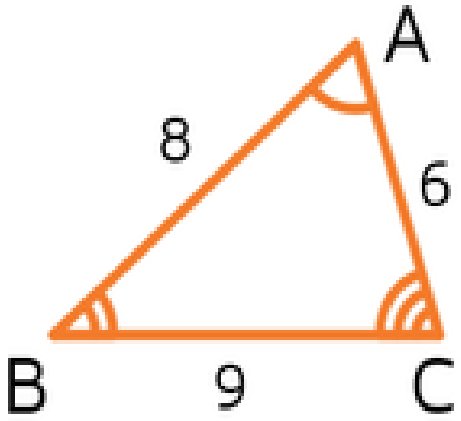
The scale factor of ▱ ABCD to ▱ WXYZ is 4.



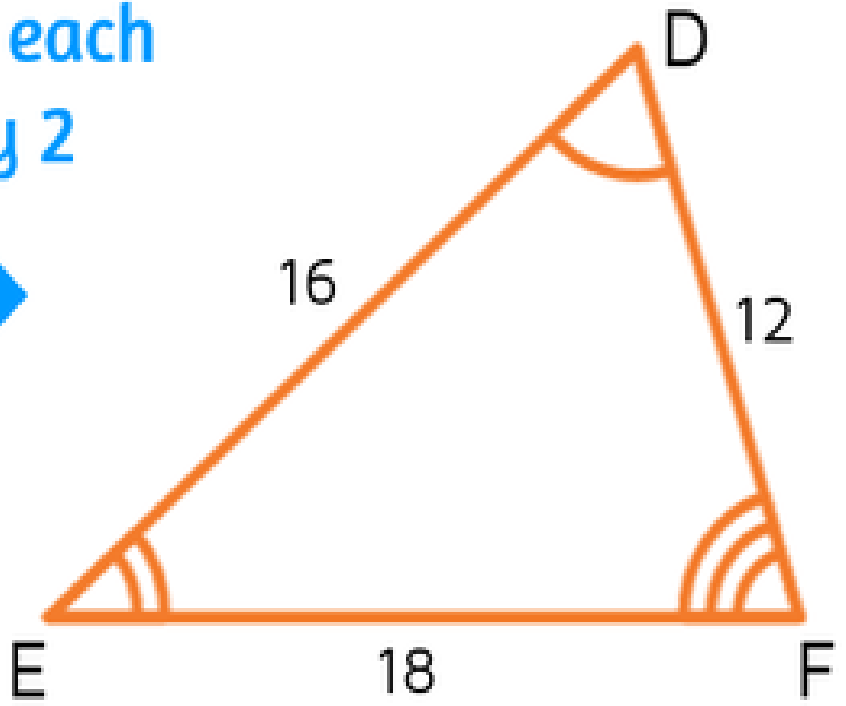
Multiply each side by 4



The scale factor of △ABC to △DEF is 2.



Multiply each side by 2



Practice:

Go to this website:

Similar Figures – Side Lengths and Angle Measurements

1. Wait until the advertisement is finished to play.
2. Look for the missing side length and find its corresponding (or matching) side on the other shape.
3. Determine what the scale factor would be to go from the original to the similar shape.
4. Select the answer that shows the correct answer.
5. Each game has 10 questions. Green boxes mean your answer was correct and yellow answer means your answer was incorrect.

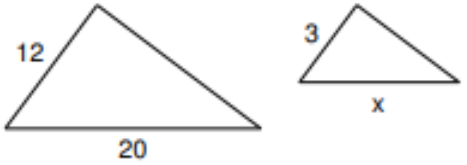
Note: Corresponding (matching) angles in similar shapes are the SAME SIZE.

Practice:

Answer the questions on a piece of paper.

For each problem, draw and label the shapes. Then use scale factor to help you find the missing side length.

1.



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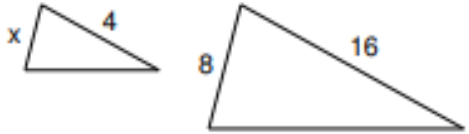

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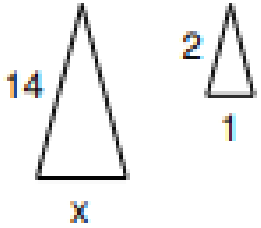

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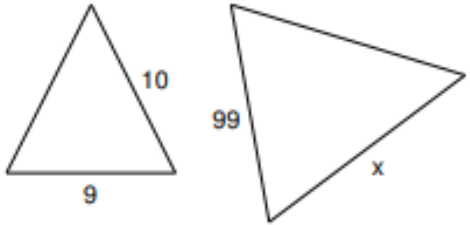

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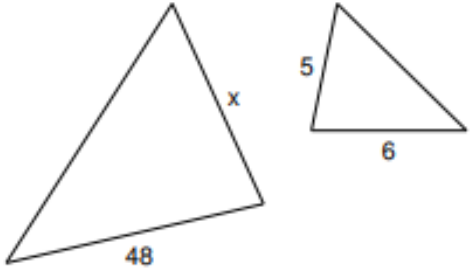

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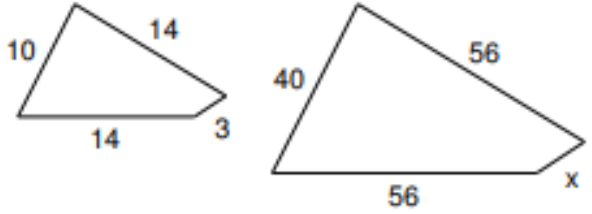
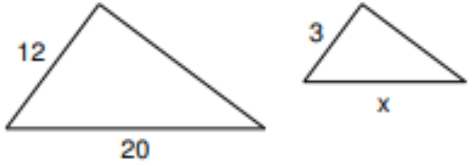


Answer Key:

Once you have completed the problems, check your answers here.

Note: You may have labeled your shapes correctly but when you found the missing side length, you may have multiplied instead of divided or divided instead of multiplying. Did the missing side length happen on the original (the one on the left) or the similar figure (one on the right)?

1. 

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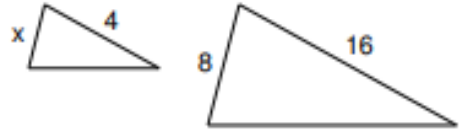
2. 

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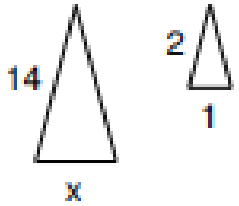
3. 

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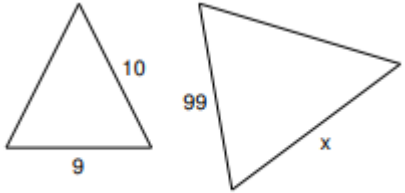
4. 

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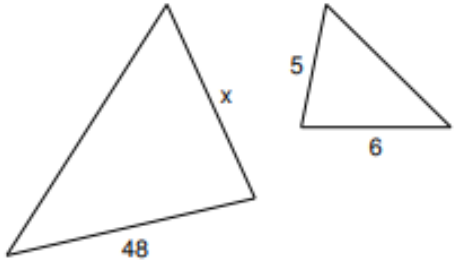
5. 

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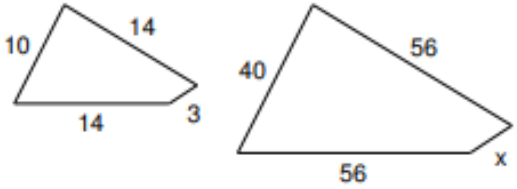
6. 

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Additional Practice:

Click on the links below to get additional practice and to check your understanding!

Are these figures similar?

Solve similar triangles - (basic)