Unit 1, Lesson 3

Making Scaled Copies

Let's draw scaled copies.

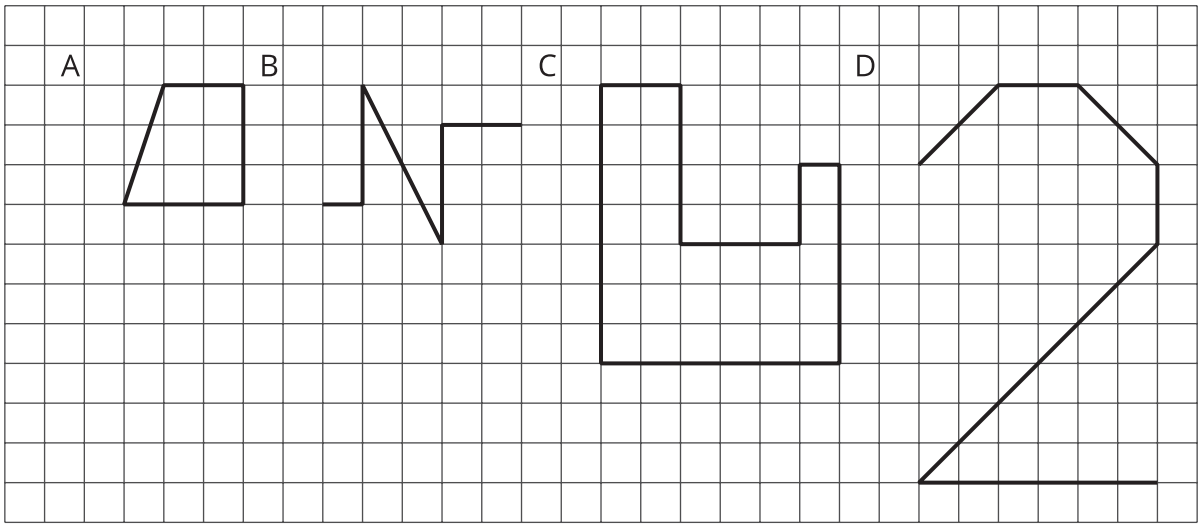
3.1 Math Talk: Missing Operation

Complete each equation to make it true.

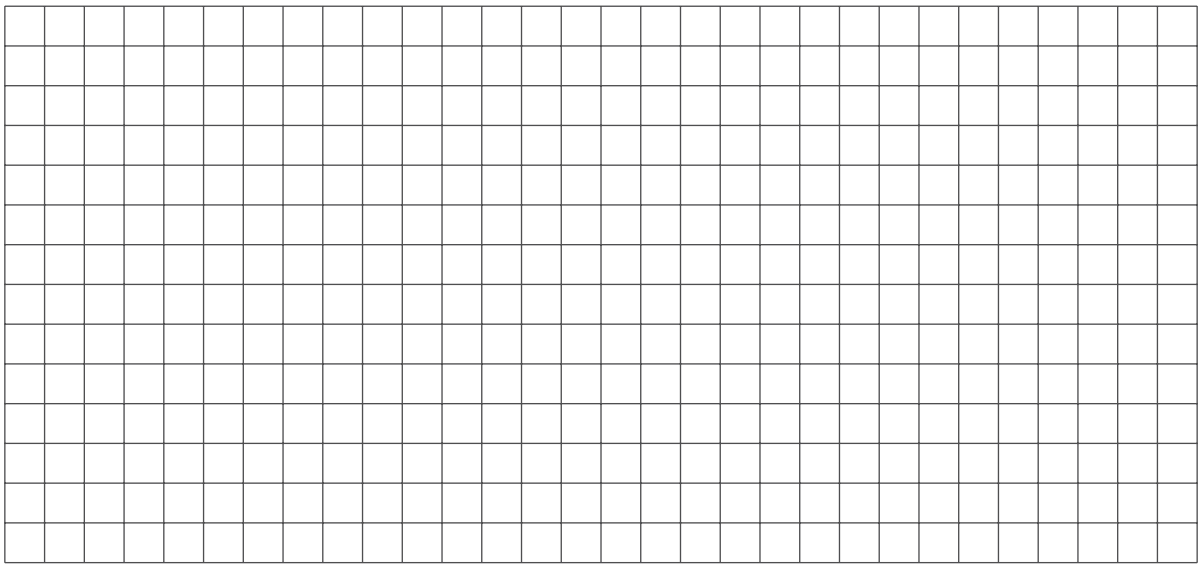
- $5 _____ = 10$
- $3 _____ = 15$
- $14 _____ = 21$
- $30 _____ = 6$

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3.2 Drawing Scaled Copies

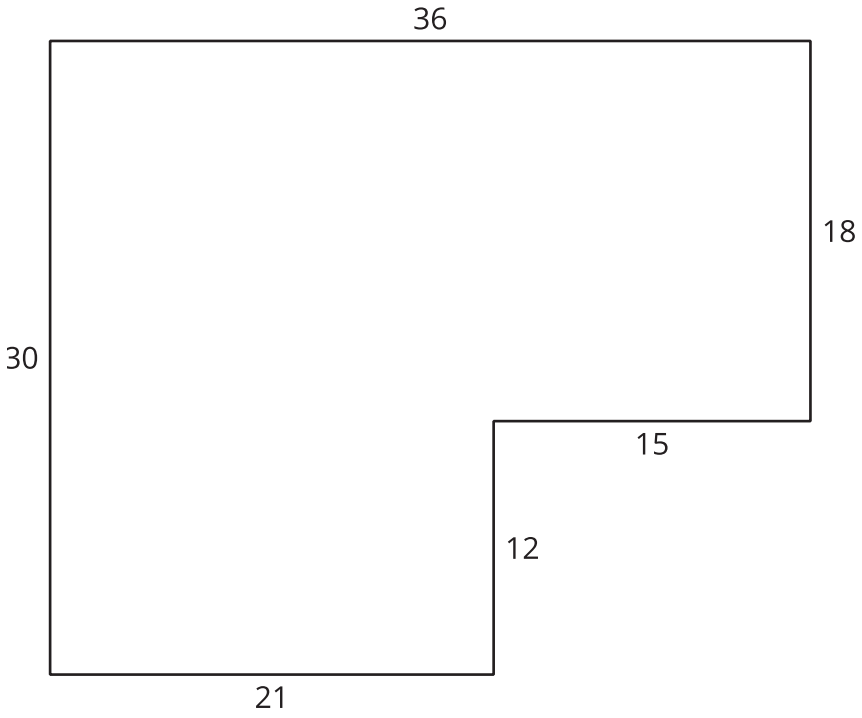


1. Draw a scaled copy of either Figure A or B using a scale factor of 3.
2. Draw a scaled copy of either Figure C or D using a scale factor of $\frac{1}{2}$.



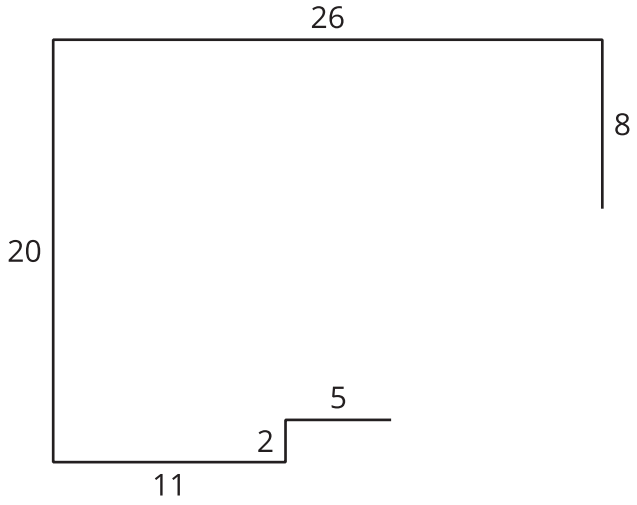
3.3 Which Operations? (Part 1)

Diego and Jada want to scale this polygon so the side that corresponds to 15 units in the original is 5 units in the scaled copy.

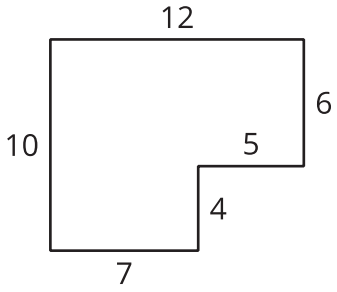


Diego and Jada each use a different operation to find the new side lengths. Here are their finished drawings.

Diego's drawing



Jada's drawing



1. What operation do you think Diego used to calculate the lengths for his drawing?

2. What operation do you think Jada used to calculate the lengths for her drawing?

3. Did each method produce a scaled copy of the polygon? Explain your reasoning.

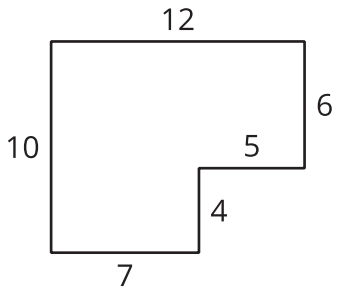
3.4 Which Operations? (Part 2)

Andre wants to make a scaled copy of Jada's drawing so that the side that corresponds to 4 units in Jada's polygon is 8 units in his scaled copy.

1. Andre says "I wonder if I should add 4 units to the lengths of all of the segments?" What would you say in response to Andre? Explain or show your reasoning.

2. Create the scaled copy that Andre wants. If you get stuck, consider using the edge of an index card or paper to measure the lengths needed to draw the copy.

Jada's drawing



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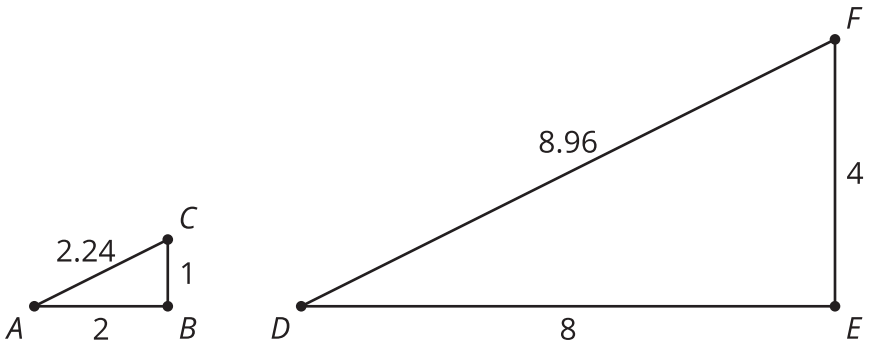
Are you ready for more?

The side lengths of Triangle B are all 5 more than the side lengths of Triangle A. Can Triangle B be a scaled copy of Triangle A? Explain your reasoning.

Lesson 3 Summary

Creating a scaled copy involves *multiplying* the lengths in the original figure by a scale factor.

For example, to make a scaled copy of triangle ABC where the base is 8 units, we would use a scale factor of 4. This means multiplying all the side lengths by 4, so in triangle DEF, each side is 4 times as long as the corresponding side in triangle ABC.



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