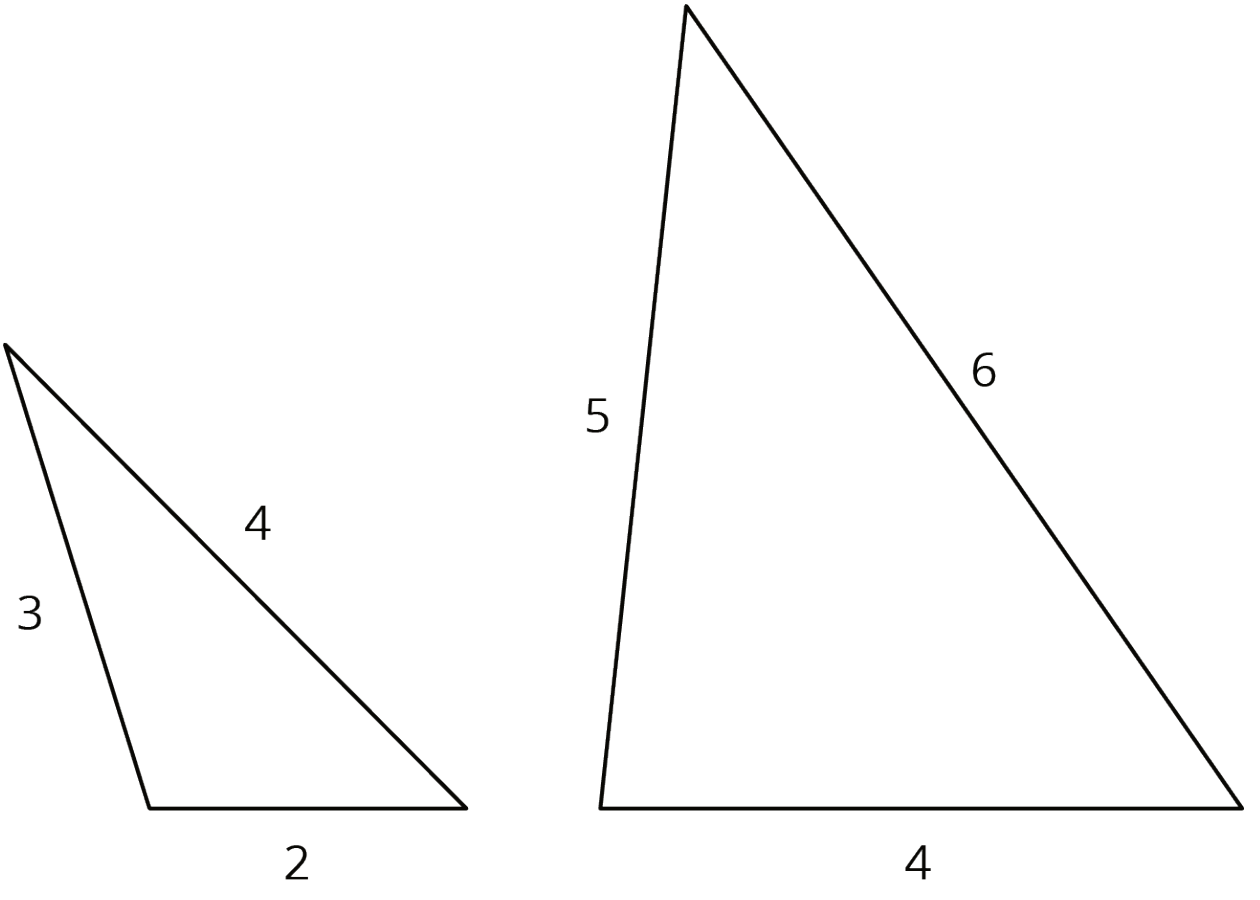
Unit 2 Lesson 9: Side Length Quotients in Similar Triangles

1 Two-three-four and Four-five-six (Warm up)

Student Task Statement

Triangle A has side lengths 2, 3, and 4. Triangle B has side lengths 4, 5, and 6. Is Triangle A similar to Triangle B?

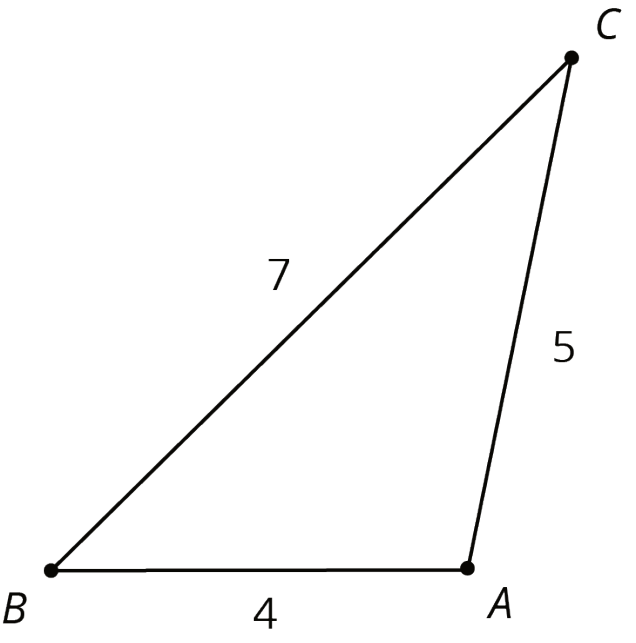
Activity Synthesis



2 Quotients of Sides Within Similar Triangles

Student Task Statement

Triangle ABC is similar to triangles DEF, GHI, and JKL. The scale factors for the dilations that show triangle ABC is similar to each triangle are in the table.



1. Find the side lengths of triangles DEF, GHI, and JKL. Record them in the table.

triangle	scale factor	length of short side	length of medium side	length of long side
ABC	1	4	5	7
DEF	2			
GHI	3			
JKL	$\frac{1}{2}$			

2. Your teacher will assign you one of the three columns. For all four triangles, find the quotient of the triangle side lengths assigned to you and record it in the table. What do you notice about the quotients?

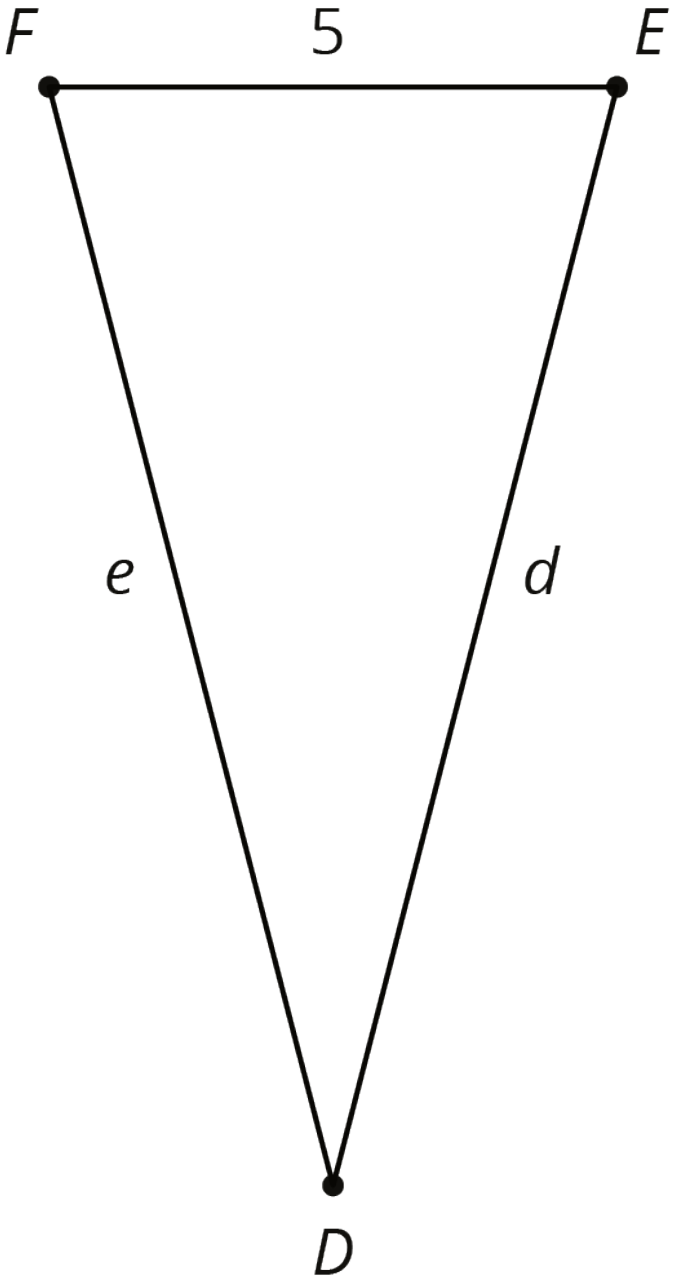
triangle	(long side) ÷ (short side)	(long side) ÷ (medium side)	(medium side) ÷ (short side)
ABC	$\frac{7}{4}$ or 1.75		
DEF			
GHI			
JKL			

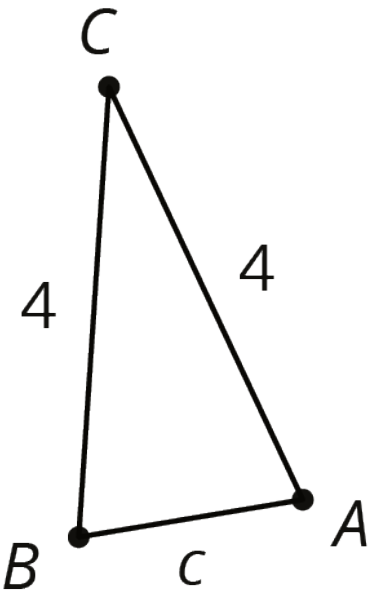
3. Compare your results with your partners' and complete your table.

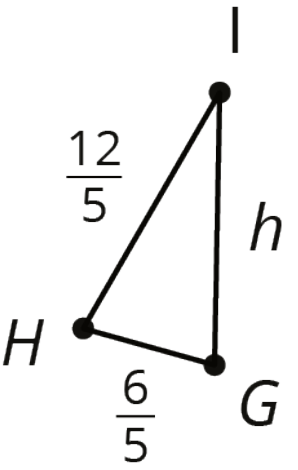
3 Using Side Quotients to Find Side Lengths of Similar Triangles

Student Task Statement

Triangles ABC, EFD, and GHI are all similar. The side lengths of the triangles all have the same units. Find the unknown side lengths.







Images for Activity Synthesis