

Name: _____

Class/Block: _____ Date: _____

Exploration: Properties of Similar Triangles

In this exploration you will explore properties of similar triangles (same shape but different size).

- Corresponding angles of the two triangles have the same measure.
- Corresponding sides of the two triangles are proportional.

Directions:

Step 1: Launch the [Similar Triangles: Side Angle Side](http://maine.edc.org/file.php/1/tools/SimilarTrianglesSAS.html) applet

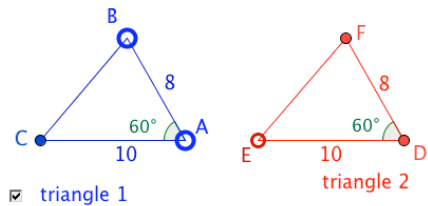
<http://maine.edc.org/file.php/1/tools/SimilarTrianglesSAS.html>

- a) Leave the “Ratio of Corresponding Sides” slider set to $\frac{1}{1}$
- b) Observe the two triangles provided

Similar Triangles: Side Angle Side

directions

ratio of corresponding sides = $\frac{1}{1}$



Step 2: Set up the ratios provided. Fill in the lengths of the sides. Answer the associated questions.

Look at the angles. Fill in the measure. Answer the associated question.

	Triangle 1	Triangle 2	Questions
1)	a) $\frac{AB}{DF} = \underline{\hspace{2cm}}$	$\frac{AC}{DE} = \underline{\hspace{2cm}}$	How do the two ratios compare?
	b) $m\angle CAB = \underline{\hspace{2cm}}$	$m\angle EDF = \underline{\hspace{2cm}}$	What do you notice about the two angles? ($\angle CAB$ and $\angle EDF$)
Click on the point B and move it. Fill in the new values.			
2)	a) $\frac{AB}{DF} = \underline{\hspace{2cm}}$	$\frac{AC}{DE} = \underline{\hspace{2cm}}$	How do the two ratios compare?
	b) $m\angle CAB = \underline{\hspace{2cm}}$	$m\angle EDF = \underline{\hspace{2cm}}$	What do you notice about the two angles? ($\angle CAB$ and $\angle EDF$)
	c) What do you notice about the two triangles? Are they the same size? Shape?		



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Move the slider so the ratio of corresponding sides is equal to $\frac{1}{2}$. ratio of corresponding sides = $\frac{1}{2}$

Fill in the new values.



3)	a) $\frac{AB}{DF} = \underline{\hspace{2cm}}$	$\frac{AC}{DE} = \underline{\hspace{2cm}}$	How do the two ratios compare now?
	b) $m\angle CAB = \underline{\hspace{2cm}}$	$m\angle EDF = \underline{\hspace{2cm}}$	What do you notice about the two angles? ($\angle CAB$ and $\angle EDF$)
	c) $AC = \underline{\hspace{2cm}}$	$DE = \underline{\hspace{2cm}}$	What do you notice about the lengths of \overline{AC} and \overline{DE} ? How do they compare?

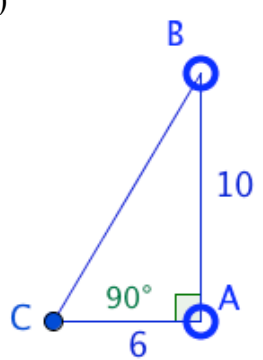
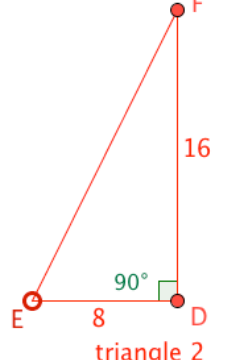
Move the slider so the ratio of corresponding sides is equal to $\frac{1}{3}$. ratio of corresponding sides = $\frac{1}{3}$

Fill in the new values.



4)	a) $\frac{AB}{DF} = \underline{\hspace{2cm}}$	$\frac{AC}{DE} = \underline{\hspace{2cm}}$	How do the two ratios compare now?
	b) $m\angle CAB = \underline{\hspace{2cm}}$	$m\angle EDF = \underline{\hspace{2cm}}$	What do you notice about the two angles? ($\angle CAB$ and $\angle EDF$)
	c) $AC = \underline{\hspace{2cm}}$	$DE = \underline{\hspace{2cm}}$	What do you notice about the lengths of \overline{AC} and \overline{DE} ? How do they compare?

5) **Look at the following pairs of triangles.**
Using your experience above, determine if these triangles are similar:

a)		b)		Are they similar or not? Explain how you know.
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