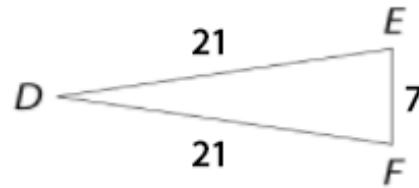
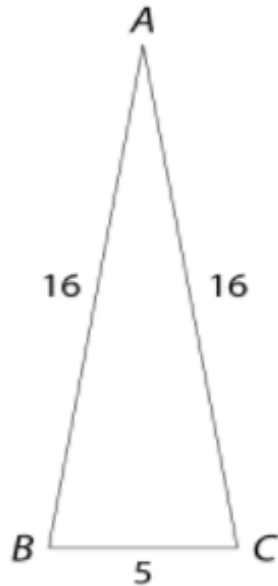


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16.4 AA Similarity of Triangles - teacher

1. Show whether or not the pair of triangles is similar. Drag and drop the fractions into the boxes to match each fraction with its corresponding ratio and select a similarity statement if the triangles are similar.



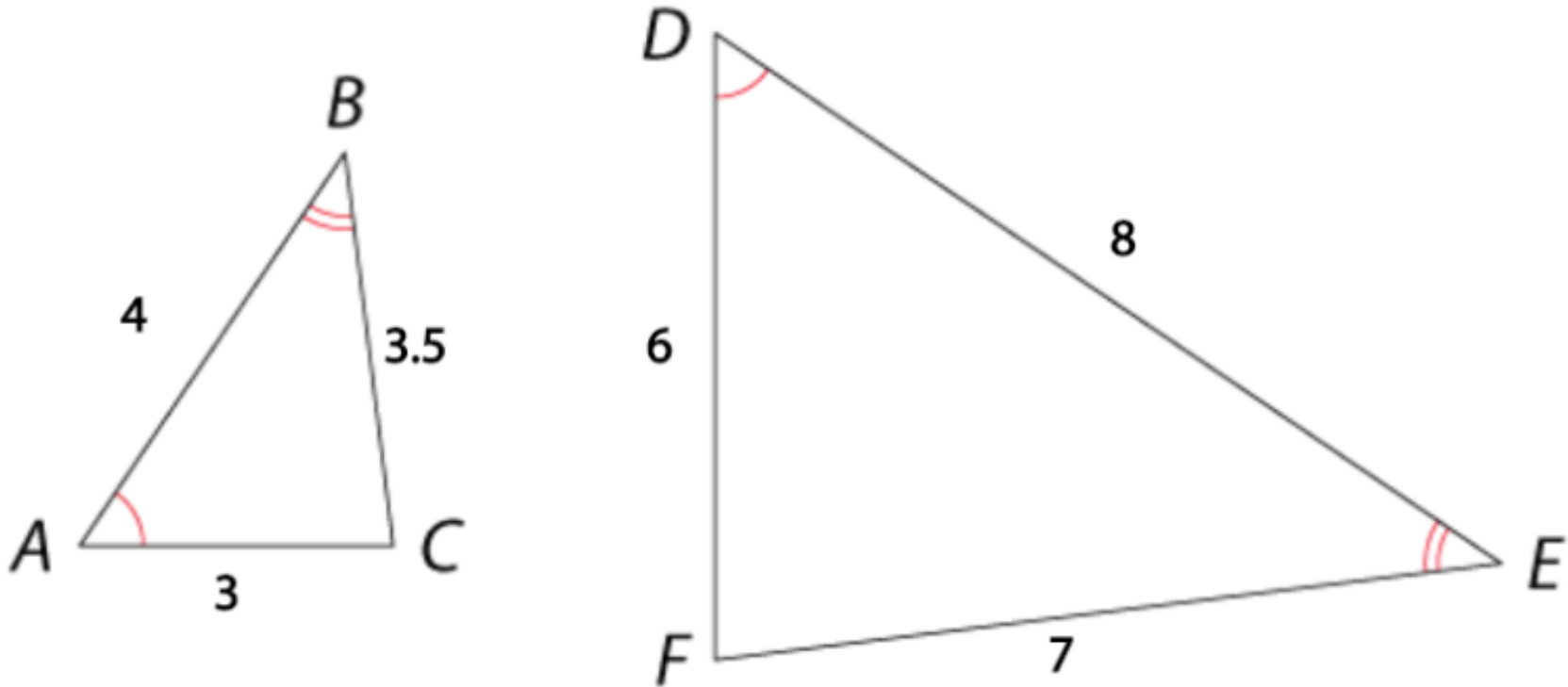
$\frac{AB}{DE} =$

$\frac{BC}{EF} =$

$\triangle ABC$ and $\triangle DEF$ are not similar. ▼



2. Show that the triangles are similar by comparing the ratios of the corresponding sides. Simplify your answer completely in order to be able to compare the ratios of the corresponding sides.

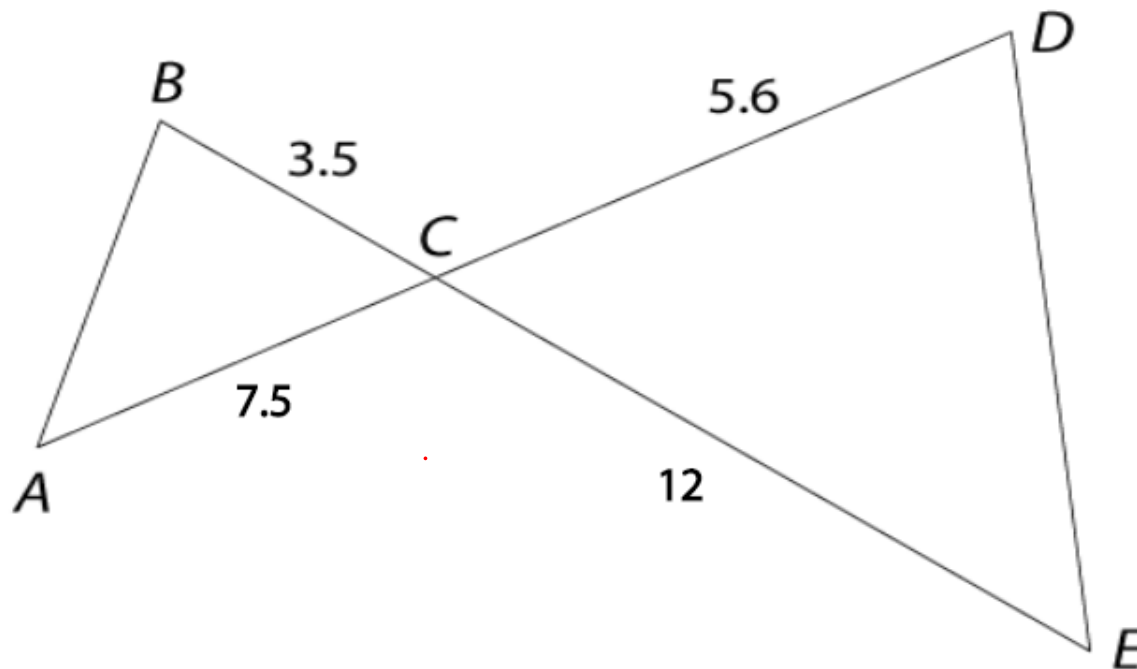


$$\frac{AB}{DE} = \frac{1}{2}$$

$$\frac{AC}{DF} = \frac{1}{2}$$

$$\frac{BC}{EF} = \frac{1}{2}$$

3. Show whether or not the pair of triangles is similar. Complete the justification of your answer, and select a similarity statement if the triangles are similar.



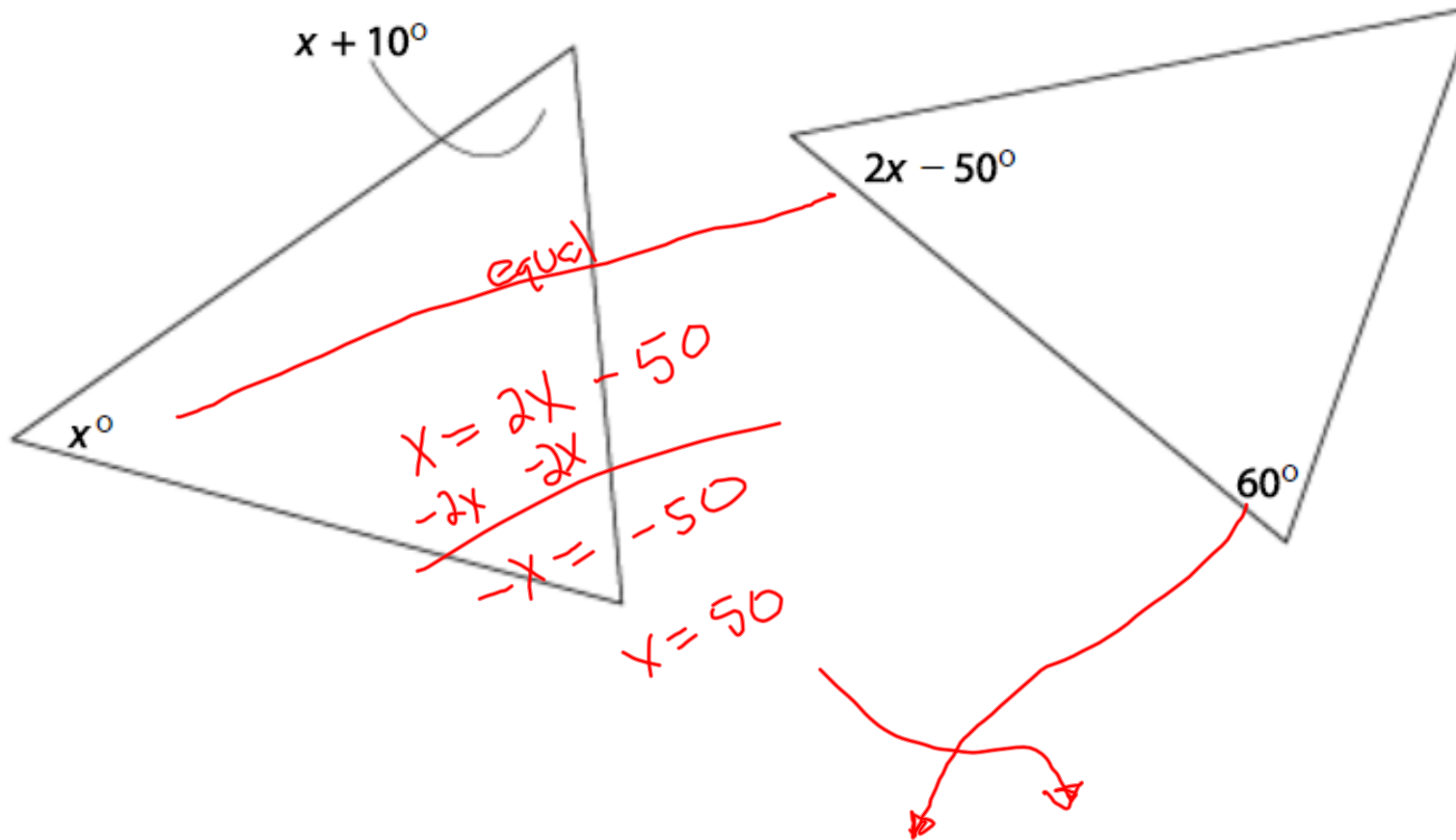
$\angle ACB \cong \angle ECD$ by the Vertical Angle Theorem.

$$\frac{BC}{DC} = \frac{3.5}{5.6} \quad 0.625$$

$$\frac{AC}{EC} = \frac{7.5}{12} \quad 0.625$$

$\triangle ABC$ and $\triangle EDC$ are similar by the SAS Triangle Similarity Theorem.

4. Find all possible values of x for which these two triangles are similar.



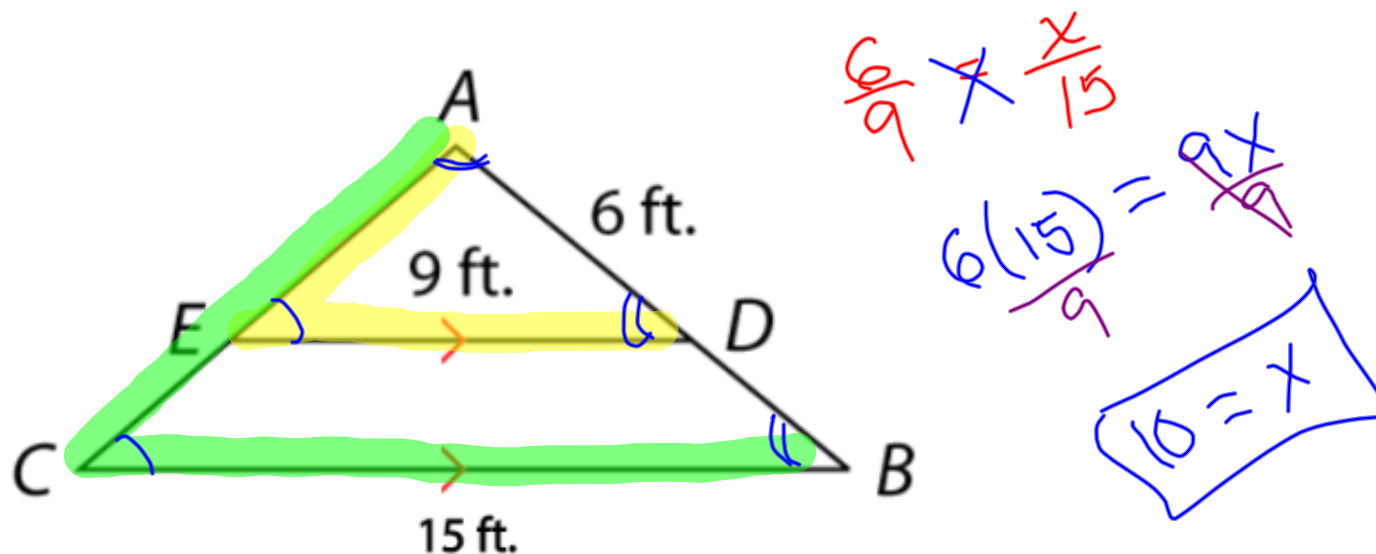
The only possible values of x are $^\circ$ and $^\circ$.

5.) Determine if the following transformation is a dilation.

$$(x, y) \rightarrow (5x, 5y)$$

The transformation is a dilation.

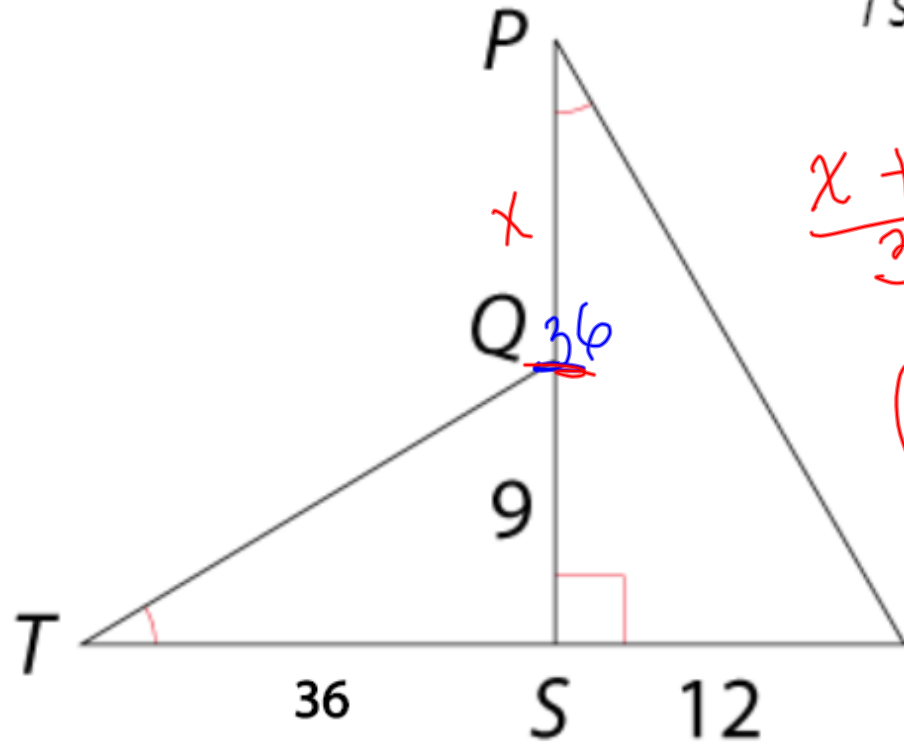
6. A builder was given a design plan for a triangular roof as shown. Explain how he knows that $\triangle AED \sim \triangle ACB$. Then find AB .



By the Corresponding Angles Theorem, $\angle AED \cong \angle C$ and $\angle ADE \cong \angle B$.
 $\angle A \cong \angle A$ by the Reflexive Property of Congruence. So $\triangle AED$ is similar to $\triangle ACB$ by the AA Triangle Similarity Theorem.

The length of AB is feet.

Find PQ , if possible.



$$\frac{PQ + QS}{TS} = \frac{SR}{QS}$$

$$\frac{x + 9}{36} = \frac{12}{9} \div 3$$

$$\frac{(x + 9)}{36} = \frac{4}{3}$$

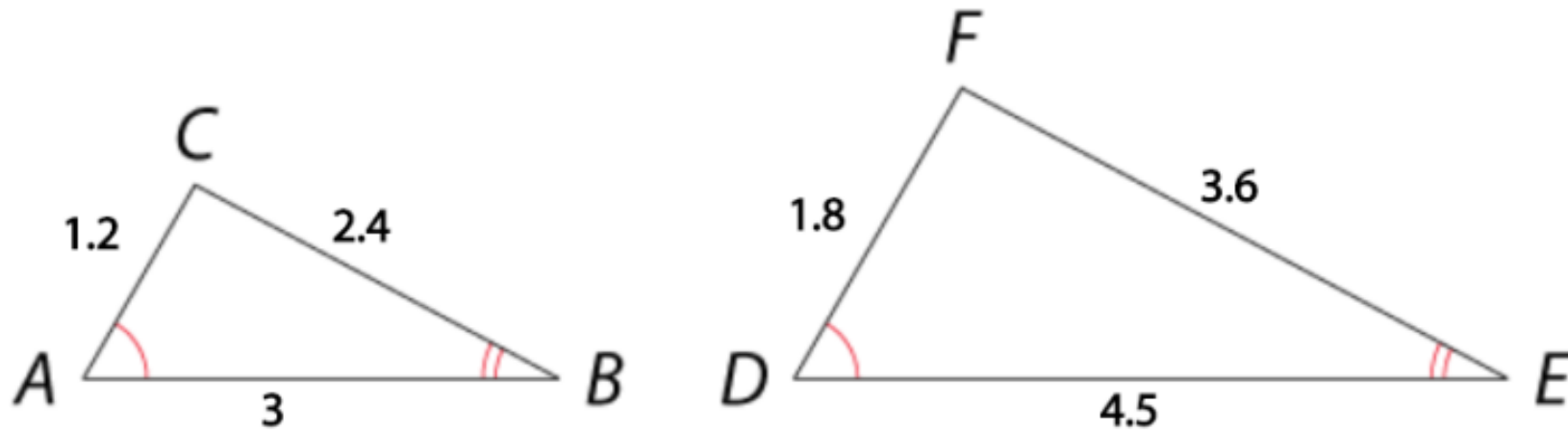
$$3(x + 9) = 4(36)$$

$$3x + 27 = 144$$

$$\begin{array}{r} 3x + 27 = 144 \\ -27 \quad -27 \\ \hline 3x = 117 \\ \frac{3x}{3} = \frac{117}{3} \\ x = 39 \end{array}$$

$PQ =$

Show that the triangles are similar by comparing the ratios of the corresponding sides. Simplify your answer completely in order to be able to compare the ratios of the corresponding sides.



$$\frac{DE}{AB} = \boxed{1.5}$$

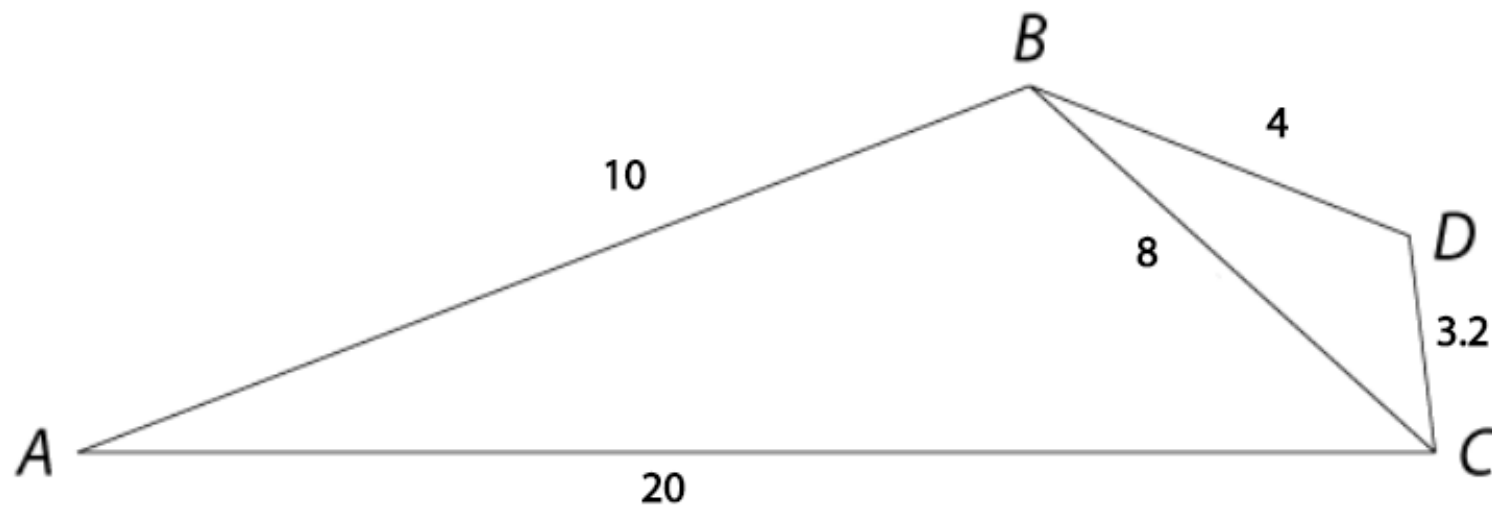
$$\frac{DF}{AC} = \boxed{1.5}$$

$$\frac{EF}{BC} = \boxed{1.5}$$

$$\frac{4.5}{3} = 1.5$$

Same

Show whether or not the pair of triangles is similar. Complete the justification of your answer, and select a similarity statement if the triangles are similar.



$$\frac{BC}{DC} = \boxed{2.5}$$

$$\frac{AB}{BD} = \boxed{2.5}$$

$$\frac{AC}{BC} = \boxed{2.5}$$

$\triangle ABC$ and $\triangle BDC$ are similar by the SSS Triangle Similarity Theorem \blacktriangledown .

The picture shows a person taking a pinhole photograph of himself. Light entering the opening reflects his image on the wall, forming similar triangles. What is the height of the image to the nearest inch?

