

What You Will Learn

- ▶ Use the Angle-Angle Similarity Theorem.
- ▶ Solve real-life problems.

AA } ~

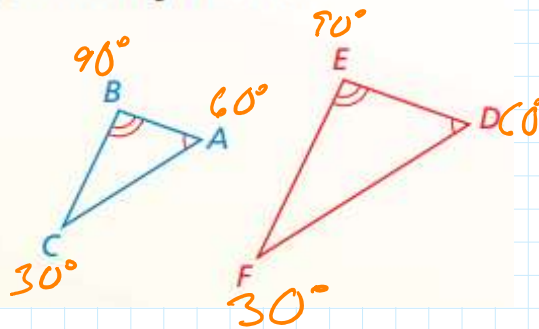
AAS }
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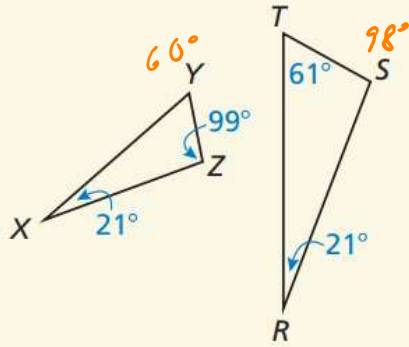
Theorem 8.3 Angle-Angle (AA) Similarity Theorem

If two angles of one triangle are congruent to two angles of another triangle, then the two triangles are similar.

If $\angle A \cong \angle D$ and $\angle B \cong \angle E$,
 then $\triangle ABC \sim \triangle DEF$.



Determine whether the triangles are similar. If they are, write a similarity statement. Explain your reasoning.



$$\frac{AB}{XY} = \frac{BC}{YZ} = \frac{AC}{XZ}$$

$\triangle XYZ$

$$z + 99 + y = 180$$

$$120 + y = 180$$

$$y = 60$$

$\triangle RST$

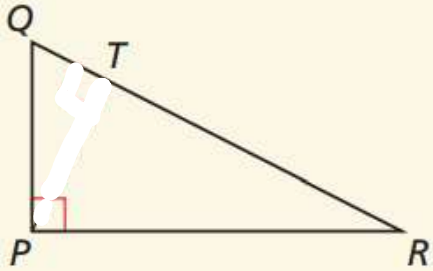
$$z + 61 + s = 180$$

$$82 + s = 180$$

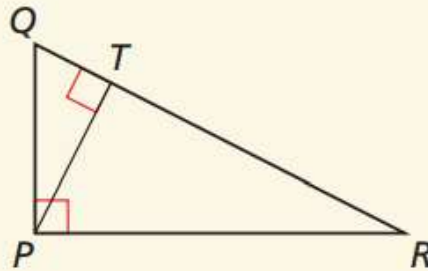
$$s = 98$$

Not \sim

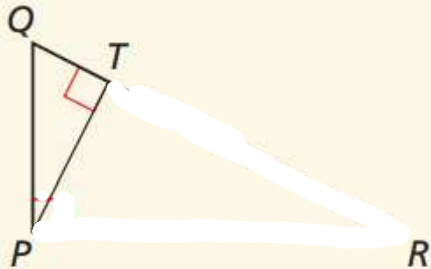
Show that $\triangle QPR \sim \triangle QTP$.



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Show that $\triangle QPR \sim \triangle QTP$.



$$\angle Q \cong \angle Q$$

$$\angle T \cong \angle QPR$$

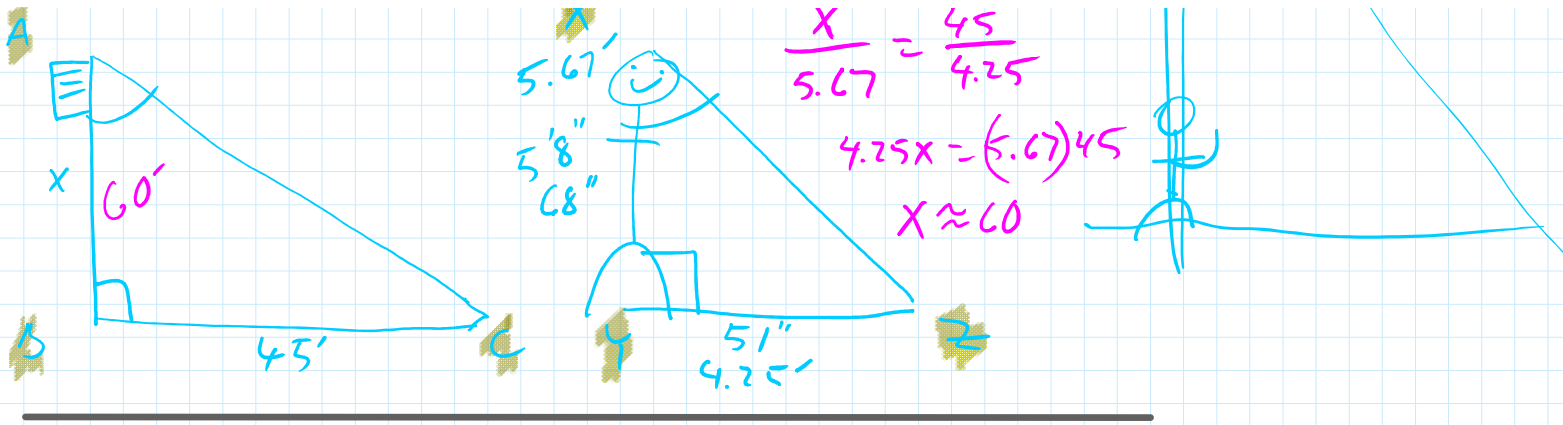
$$\frac{QP}{QT} = \frac{PR}{TP} = \frac{QR}{QP}$$

A school flagpole casts a shadow that is 45 feet long. At the same time, a boy who is five feet eight inches tall casts a shadow that is 51 inches long. How tall is the flagpole to the nearest foot?

$$\frac{AB}{XY} = \frac{BC}{YZ} = \frac{AC}{XZ}$$

$$\frac{x}{5.67} = \frac{45}{4.25}$$

5.67'



Practice sec 8.2 pg.
431: 3-21A