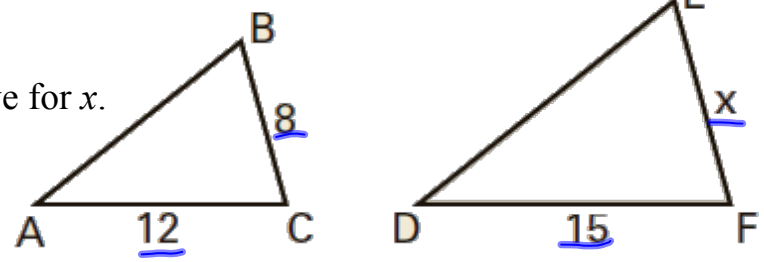
Warm Up

1. In ΔABC and ΔXZW, $m\angle A = m\angle X$ and $m\angle B = m\angle Z$. What can you conclude about $m\angle C$ and $m\angle W$?

2. Solve $\frac{x}{18} = \frac{54}{10}$ $\frac{18 \cdot 54}{10}$ $x = 97.2$

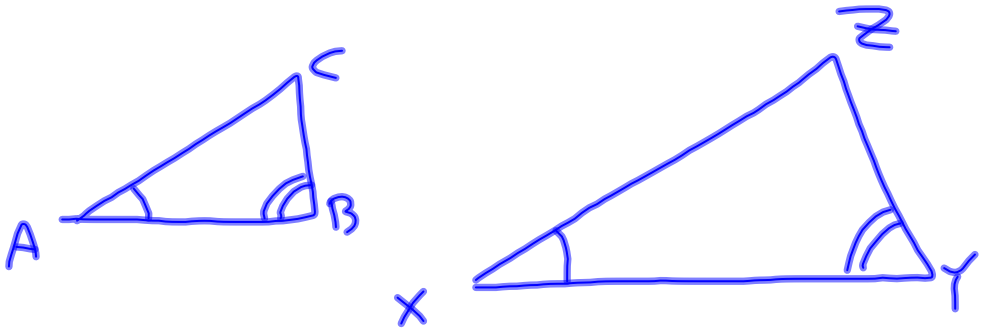
3. $\Delta ABC \sim \Delta DEF$. Solve for x.



$\frac{8}{12} = \frac{x}{15}$ $x = 10$

6-4 AA Triangle Similarity

AA Similarity Postulate - Angle-Angle



$\Delta ABC \sim \Delta XYZ$

If $\Delta ABC \sim \Delta XYZ$

$\angle A \cong$ ∠X

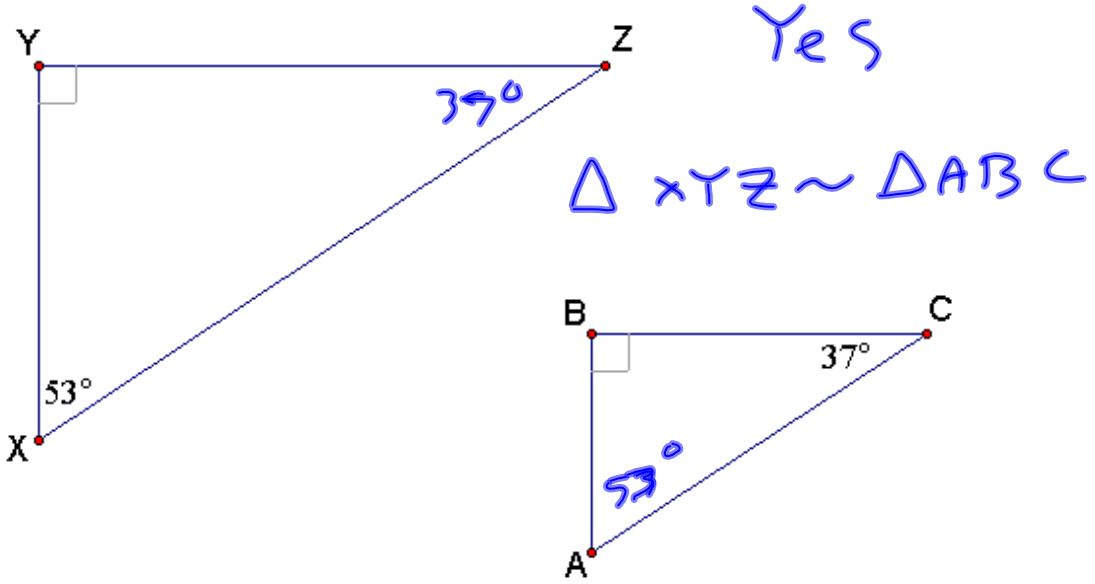
$\angle B \cong$ ∠Y

$\angle C \cong$ ∠Z

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

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

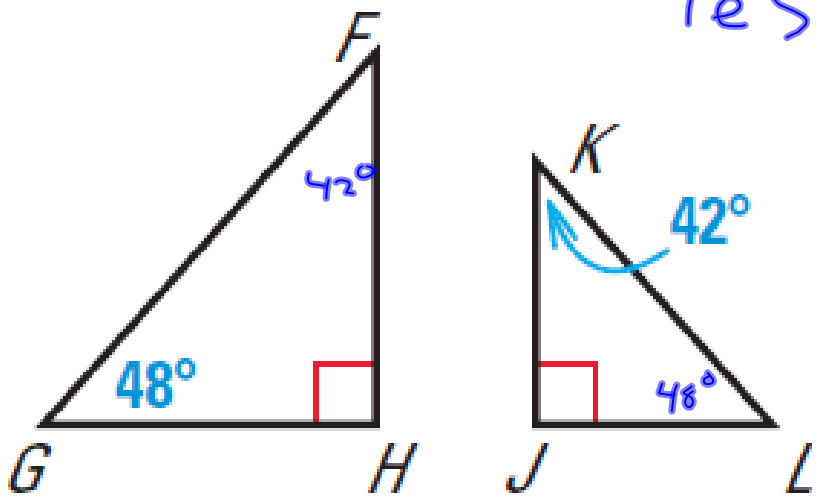
Ex 1 Determine whether the triangles are similar. If they are, write a similarity statement.



Yes

$\Delta XYZ \sim \Delta ABC$

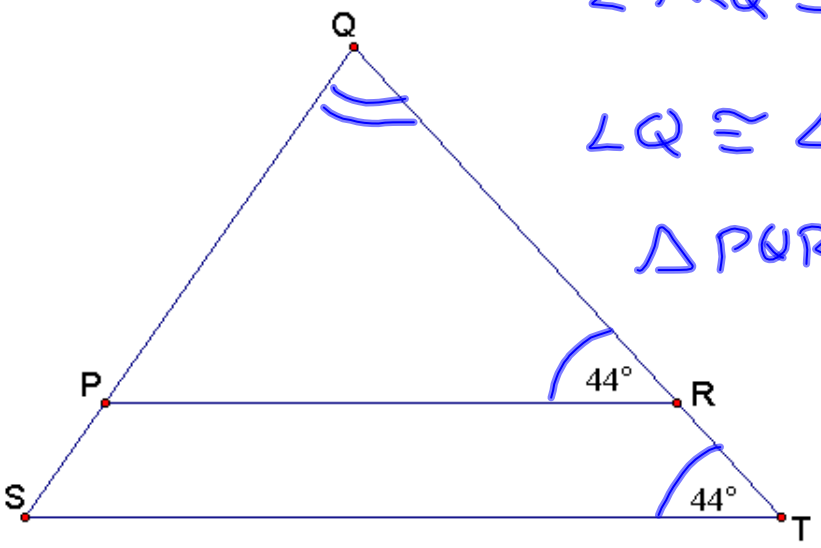
Ex. 2 Determine whether the triangles are similar. If they are, write a similarity statement.



Yes

$\triangle HGF \sim \triangle JLK$

Ex 3 Show that the two triangles are similar.

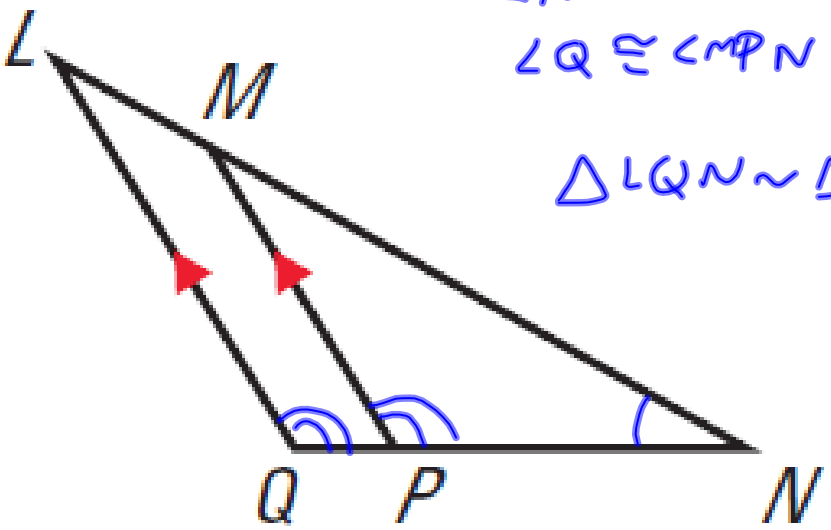


$\angle PRQ \cong \angle STQ$ Given

$\angle Q \cong \angle Q$ Reflexive

$\triangle PQR \sim \triangle SQT$ AA

Ex. 4 Show that the two triangles are similar.

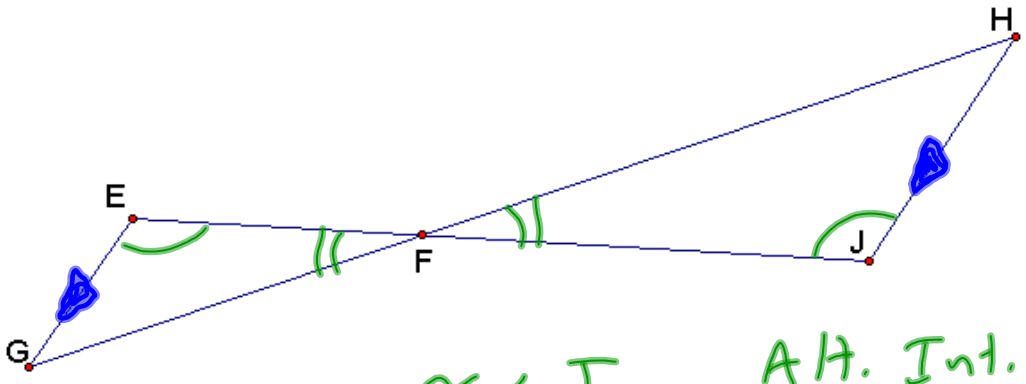


$\angle N \cong \angle N$ Reflexive

$\angle Q \cong \angle MPN$ Corr. $\angle$ Post.

$\triangle LQN \sim \triangle MPN$ AA

Ex 5 Show that the two triangles are similar.

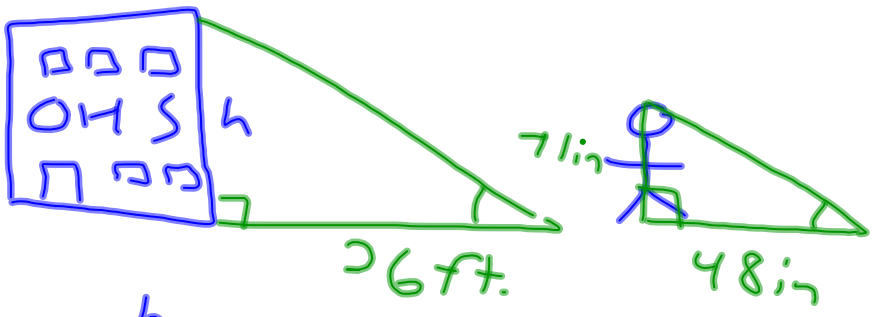


$\angle E \cong \angle J$ Alt. Int. $\angle$'s

$\angle EFG \cong \angle HFJ$ Vert. $\angle$'s

$\triangle GEF \sim \triangle HJF$ AA

Ex 6 Oregon High School casts a shadow that is 26 feet long. At the same time, a student who is 71 inches tall casts a shadow that is 48 inches long. How tall is OHS?



$\frac{h}{26\text{ ft.}} = \frac{71\text{in}}{48\text{in}}$ $h \approx 38.4$ ft.

Ex. 7 A tree casts a shadow 15 feet long. A person who is 6 feet tall casts a shadow 2.5 feet long. How tall is the tree?