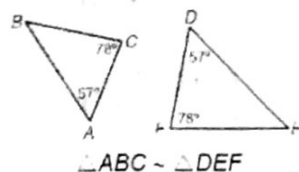


Name: _____ Date: _____

3 Ways to Prove Triangles are Similar

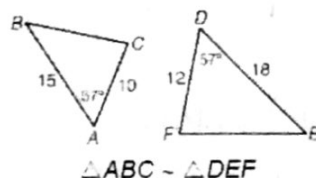
AA~ Postulate:

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



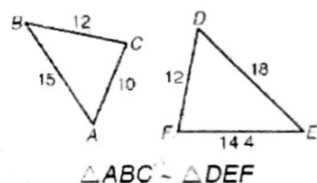
SAS~ Postulate:

If one angle of one triangle is congruent to the one angle of another triangle and the adjacent sides are proportional, then the triangles are similar.



SSS~ Postulate:

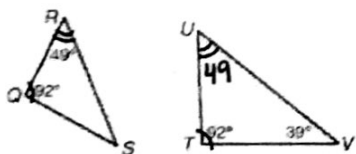
If all three sides of one triangle are proportional to corresponding sides of another triangle, then the triangles are similar.



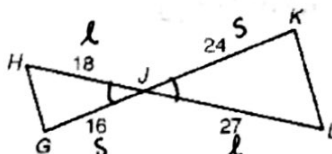
You can mark vertical angles and shared angles congruent!

Explain why the triangles are similar (SSS~, SAS~, or AA~) and write a similarity statement.

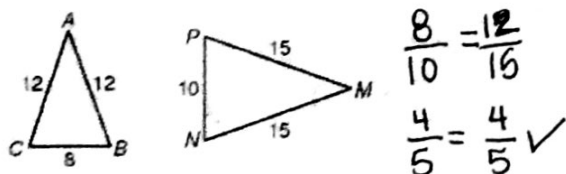
1) $\triangle RQS \sim \triangle UTV$ by AA~



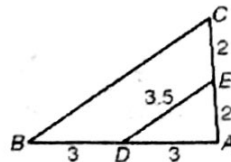
2) $\triangle HGJ \sim \triangle LKJ$ by SAS~



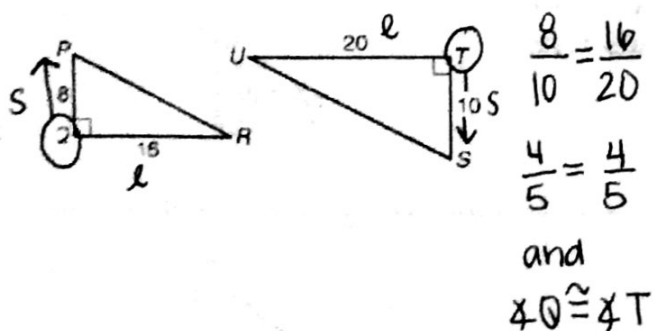
3) $\triangle ABC \sim \triangle MNP$ by SSS~



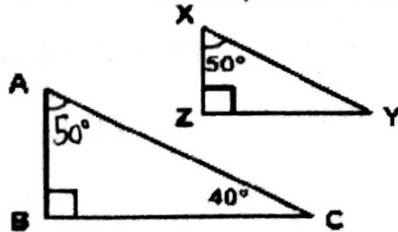
4) $\triangle ADE \sim \triangle ABC$ by SSS~ or SAS~



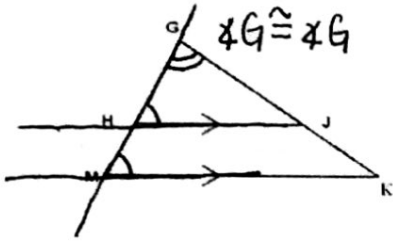
5) $\triangle QPR \sim \triangle TSU$ by SAS~



6) $\triangle ABC \sim \triangle XYZ$ by AA~

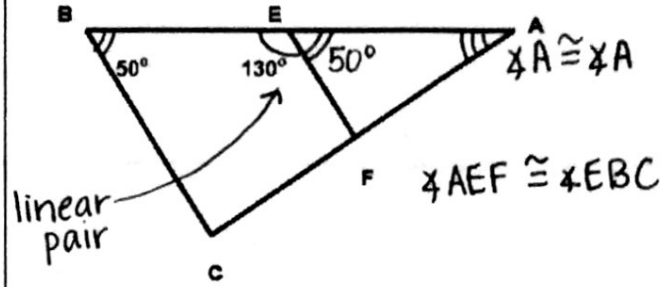


7) $\triangle GHJ \sim \triangle HMK$ by AA^\sim



$\angle GHJ \cong \angle HMK$
(by corresponding angles)

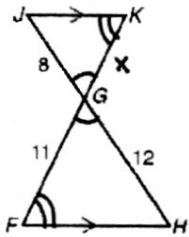
8) $\triangle AEF \sim \triangle ABC$ by AA^\sim



linear pair

Explain why the triangles are similar (SSS~, SAS~, or AA~) and find each length.

9) Similar by AA^\sim and $GK = 7.\bar{3}$



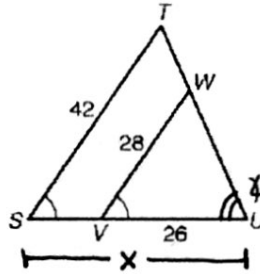
$$\frac{8}{12} = \frac{x}{11}$$

$$12x = 88$$

$$x = 7.\bar{3}$$

$\angle K \cong \angle F$ by alt. int. \angle s
 $\angle JGK \cong \angle FGH$ by vertical \angle s

10) Similar by AA^\sim and $SU = 39$

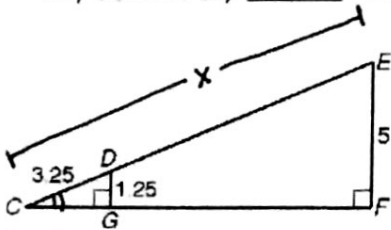


$$\frac{26}{28} = \frac{x}{42}$$

$$28x = 1092$$

$$x = 39$$

11) Similar by AA^\sim and $DE = 9.75$



$$\frac{3.25}{1.25} = \frac{x}{5}$$

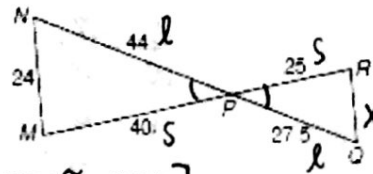
$$1.25x = 16.25$$

$$x = 13$$

$$DE = 13 - 3.25$$

$$= 9.75$$

12) Similar by SAS^\sim and $RQ = 15$



$\angle NPM \cong \angle RPQ$
 $\frac{25}{40} = \frac{27.5}{44}$
 $.625 = .625 \checkmark$

$$\frac{40}{24} = \frac{25}{x}$$

$$400 = 40x$$

$$x = 15$$