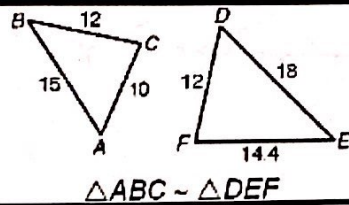


Day 2 – Similar Triangle Theorems – Notes

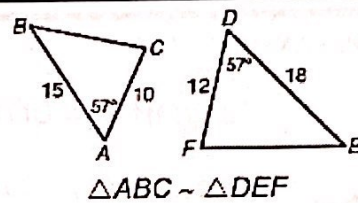
Side – Side – Side (SSS) Similarity Statement

If the measures of the corresponding sides of two triangles are proportional, the figures are similar.



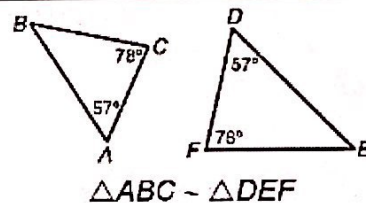
Side – Angle – Side (SAS) Similarity Statement

If the measures of two sides of a triangle are proportional to the measures of two corresponding sides of another triangle and the included angles are congruent, the figures are similar.

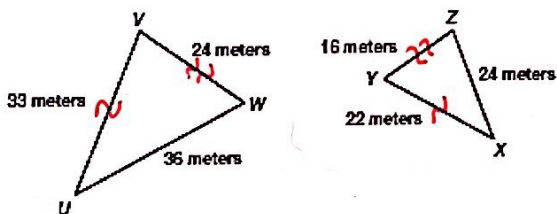


Angle – Angle (AA) Similarity Statement

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



Example 1: Prove $\triangle UVW \sim \triangle XYZ$ are similar.



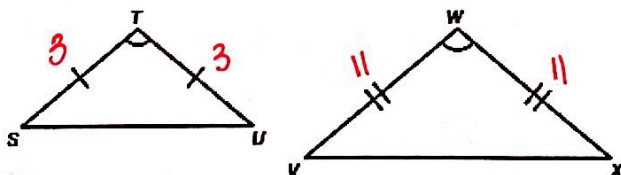
$$\frac{UV}{XY} = \frac{VW}{YZ} = \frac{UW}{XZ}$$

$$\frac{33}{22} = \frac{24}{16} = \frac{36}{24}$$

$$\frac{3}{2} = \frac{3}{2} = \frac{3}{2} \quad (\text{all 3 sides are proportional})$$

$\triangle UVW \sim \triangle XYZ$ by SSS

Example 2: Is $\triangle TSU \sim \triangle WVX$? Prove why or why not.



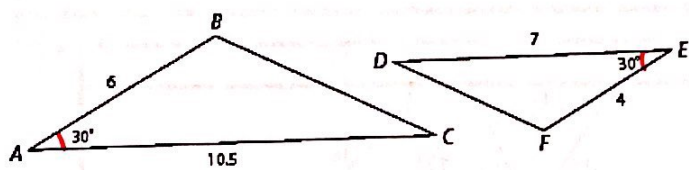
yes by SAS.

If you pick any side length value for $\triangle TSU$ and $\triangle WVX$, the sides will always be proportional.

$$\frac{ST}{VW} = \frac{TU}{WX}$$

$$\frac{3}{\parallel} = \frac{3}{\parallel}$$

Example 3: Prove $\triangle ABC \sim \triangle EFD$.



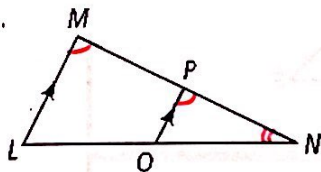
$$\frac{AB}{EF} = \frac{AC}{EO}$$

$$\frac{6}{4} = \frac{10.5}{7}$$

$$1.5 = 1.5$$

$\triangle ABC \sim \triangle EFD$ by SAS

Example 4: Prove $\triangle NML \sim \triangle NPO$.



$\angle LMP \cong \angle OPN$ by Corresponding Angles (A)

$\angle N \cong \angle N$ by the Reflexive Prop (A)

$\triangle NML \sim \triangle NPO$ by AA