

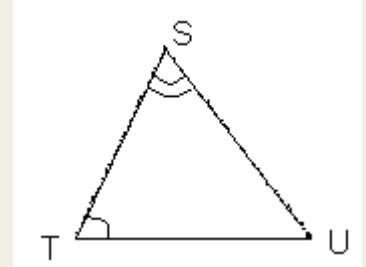
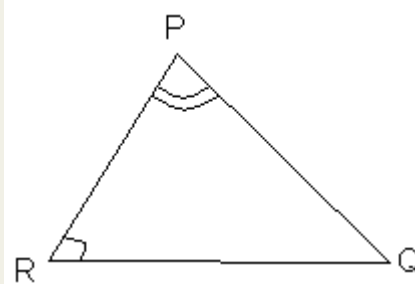
7.3 Similar Triangles

G.T.4 Given two triangles, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding parts of angles and the proportionality of all corresponding pairs of sides, and to establish the AA criterion for two triangles to be similar.

G.T.5 Use properties of congruent and similar triangles to solve real-world and mathematical problems involving sides, perimeters and areas of triangles.

Angle-Angle (AA) Similarity

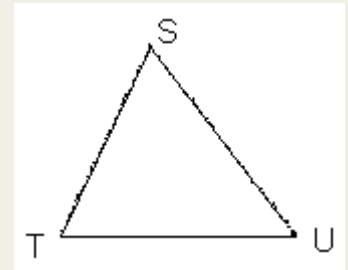
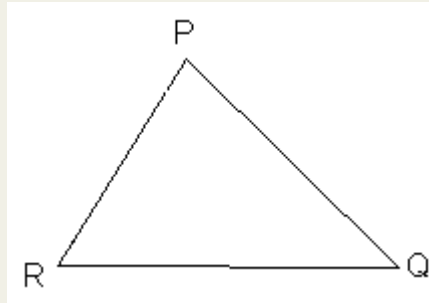
If the two angles of one triangle are _____ to two angles of another triangle, then the triangles are _____.



Example: _____

Side-Side-Side (SSS) Similarity

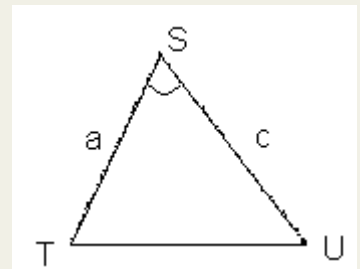
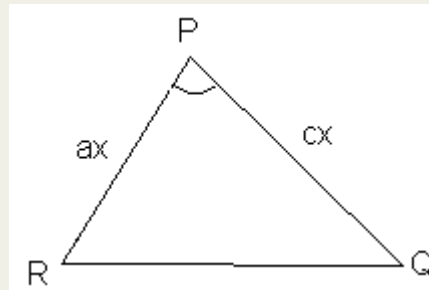
If the measures of the corresponding _____ of two triangles are _____, then the triangles are _____.



Example: _____

Side-Angle-Side (SAS) Similarity

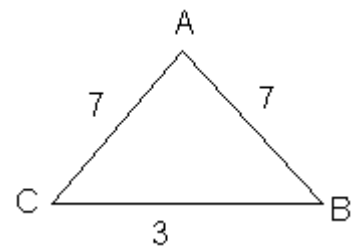
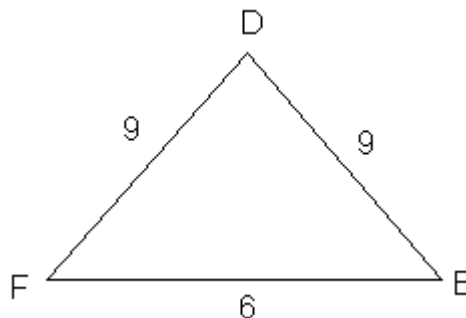
If two _____ of a triangle are _____ to the measures of two corresponding sides of another triangle and the included _____ are _____, then the triangles are _____.



Example: _____

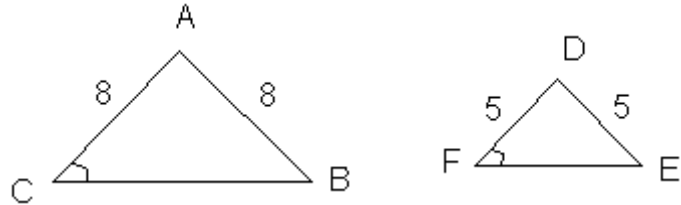
Ex 1:

Determine if the following triangles are similar. If so, write the similarity statement. Explain your reasoning.



Ex 2:

Determine if the following triangles are similar. If so, write the similarity statement. Explain your reasoning.

**Theorem**

Reflexive $\triangle ABC \sim \triangle ABC$

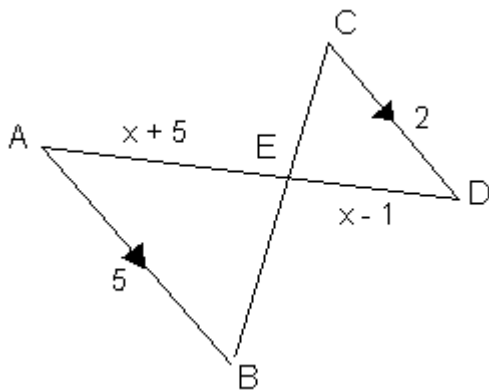
Symmetric If $\triangle ABC \sim \triangle DEF$, then $\triangle DEF \sim \triangle ABC$.

Transitive If $\triangle ABC \sim \triangle DEF$ and $\triangle DEF \sim \triangle GHI$, then $\triangle ABC \sim \triangle GHI$.

Ex 3:

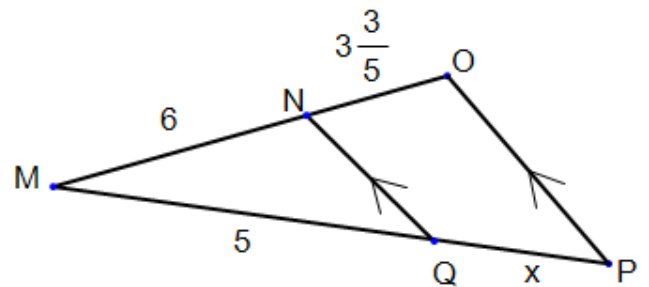
Identify the similar triangles.

Find AE and DE.

**Ex 4:**

Identify the similar triangles.

Find QP and MP.

**Ex 5:**

Megan was curious about the height of a building in her hometown. She used a 2.5 meter model of the building and measured its shadow at 1 P.M. The length of the shadow was 0.8 meters. Then she measured the building's shadow and it was 168 meters. What is the height of the building?

