Proving Triangles Similar

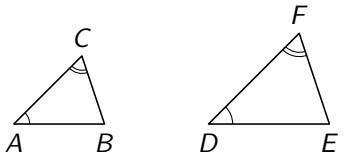
Today I Can

1. Use the AA Similarity Postulate and the SAS and SSS Similarity Theorems.

Angle-Angle (AA) Similarity

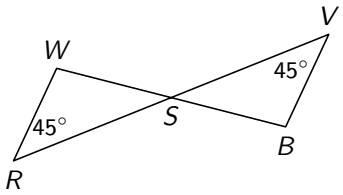
If two angles of one triangle are congruent to two angles of another, then the triangles are similar.

- $\angle A \cong \angle D$ and $\angle C \cong \angle F \implies \triangle ABC \sim \triangle DEF$

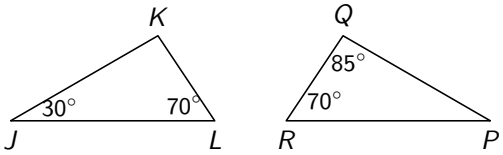


Example 1. Are the 2 triangles similar? How do you know?

(a) $\triangle RSW$ and $\triangle VSB$



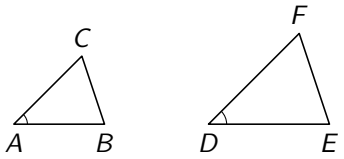
(b) $\triangle JKL$ and $\triangle PQR$



Side-Angle-Side (SAS) Similarity

If two pairs of sides of one triangle are proportional to two pairs of sides of another and the included angles are congruent, then the triangles are similar.

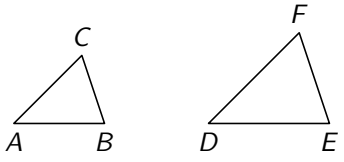
- If $\frac{AB}{DE} = \frac{AC}{DF}$
- and $\angle A \cong \angle D$
- then $\triangle ABC \sim \triangle DEF$



Side-Side-Side (SSS) Similarity

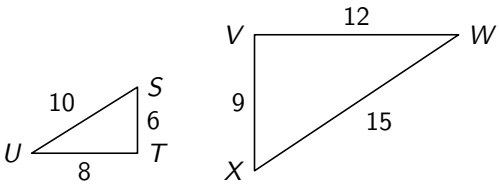
If the lengths of the 3 sides of one triangle are proportional to the lengths of another, then the triangles are similar.

- $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF} \implies \triangle ABC \sim \triangle DEF$

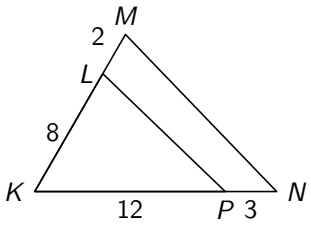


Example 2. Determine if the two triangles are similar in each. If so, write a similarity statement.

(a)

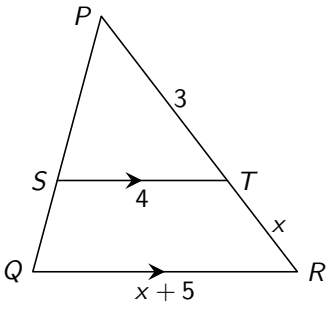


(b)



Example 3. Find the value of x in each.

(a)



(b)