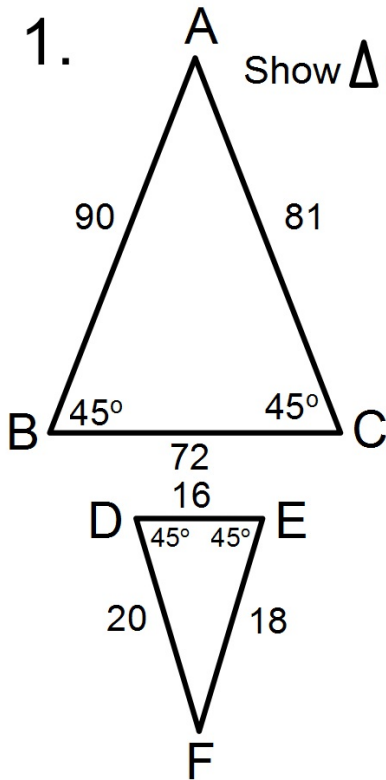


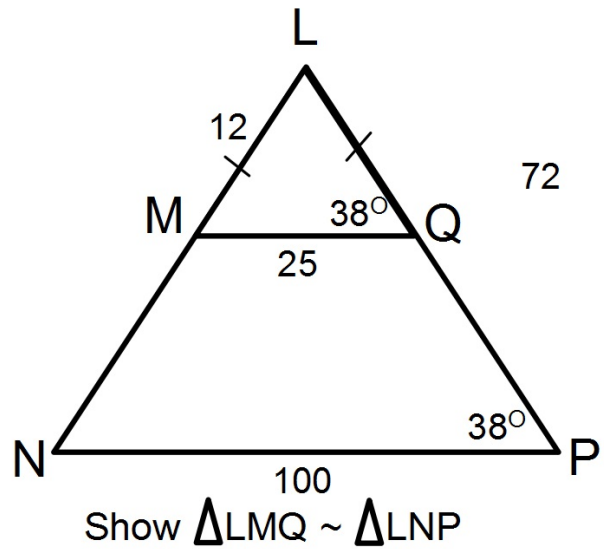
Bellwork

Write a Similarity Statement for the following:

1. Show $\triangle FDE \sim \triangle ABC$



2.



Proving Triangle Similarity

Throughout this unit we will be focusing on several methods of proving two triangles are similar including:

1. Angle-Angle (AA)

[This is the main focus of this lesson]

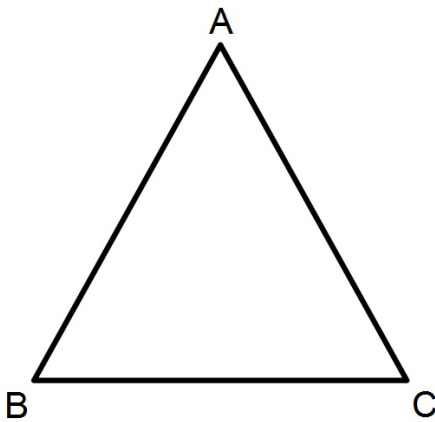
2. Side-Side-Side (SSS)

3. Side-Angle-Side (SAS)

Similarity by Angle-Angle

Angle-Angle Similarity Postulate (AA) -

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



Show $\triangle ABC \sim \triangle DEF$

$$\angle A \cong \angle D$$

$$\angle B \cong \angle E$$

OR

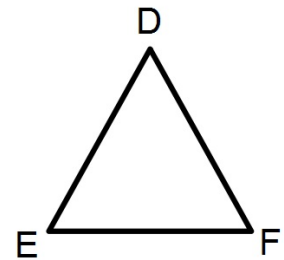
$$\angle B \cong \angle E$$

$$\angle C \cong \angle F$$

OR

$$\angle A \cong \angle D$$

$$\angle C \cong \angle F$$



Useful Theorems

Triangle Sum Theorem:

All the angles in a triangle add up to 180°

Right Angle Congruence Theorem:

All right angles are congruent

Useful Definition to use:

Congruence - If two things are equal,
Then they are also congruent.

Recall Useful Angles

Does not need mention of PARALLEL lines:

Vertical Angles:

Angles that are opposite of each other when 2 lines cross
(Visually create a bow-tie I've heard some of you saying)

REQUIRES PARALLEL lines:

Corresponding Angles:

Angles in the same placement, but different locations.
(Ex. above the transversal and left of both other lines)

Alternate Interior Angles:

Angles between the two lines going in similar directions, but on opposite sides of the transversal and not touching.

Alternate Exterior Angles:

Angles outside of the two lines going in similar directions, but on opposite sides of the transversal.

Recall Useful Properties

Reflexive Property:

For angles - $\angle A \cong \angle A$

For sides - $\overline{AB} \cong \overline{AB}$

Transitive Property:

In general...

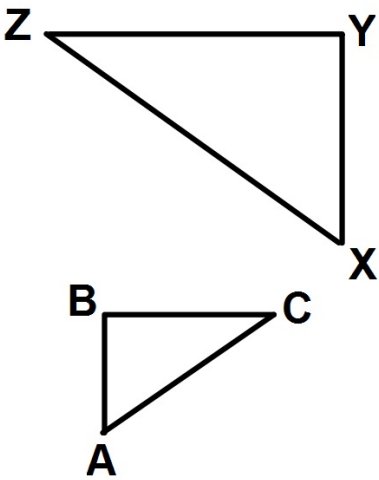
IF $a = b$ and $b = c$

THEN $a = c$

Example

Given: $XY \perp YZ$
 $AB \perp BC$
 $\angle X = 38^\circ$
 $\angle C = 52^\circ$

Prove: $\triangle XYZ \sim \triangle ABC$



Example

Given: $\overline{PR} \parallel \overline{ST}$

Prove: $\triangle PQR \sim \triangle SQT$

