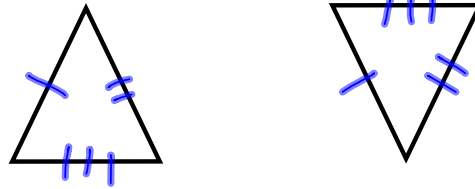


Congruent Triangles:

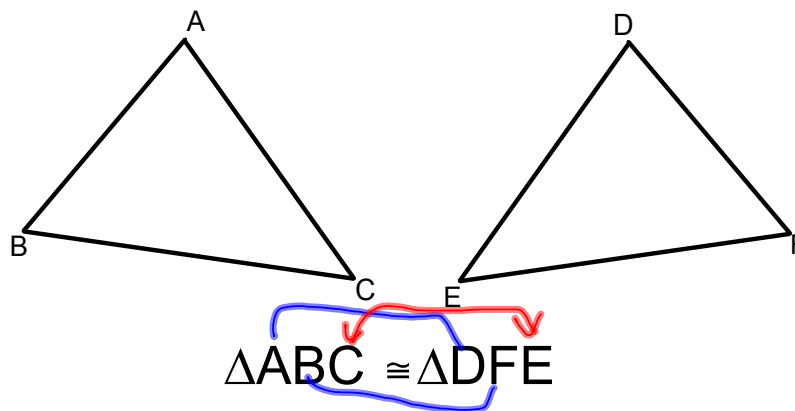
*Triangles that are the same size and shape.



Corresponding Parts:

- * Triangles that are congruent will have 6 pair of corresponding parts.
- * There will be 3 pair of angles and 3 pair of sides.

When writing a congruence statement, the order of the letters is important. It lets you know what the corresponding parts are.



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

$$\angle B \cong \angle F$$

$$\angle C \cong \angle E$$

$$\overline{AB} \cong \overline{DF}$$

$$\overline{AC} \cong \overline{DE}$$

$$\overline{BC} \cong \overline{FE}$$

Definition of Congruent Triangles (CPCTC):

- * 2 Triangles are \cong iff their corresponding parts are \cong .

Corresponding parts of congruent triangles are congruent

Properties of Congruent Triangles:

- * **Reflexive Property:** A triangle is \cong to itself.

$$a = a$$

$$\triangle ABC \cong \triangle ABC$$

Symmetric Property:

- * The order we write the triangle congruence will not matter. (Order of Letters does matter.)

$$\triangle JKL \cong \triangle PQR, \text{ then } \triangle PQR \cong \triangle JKL$$

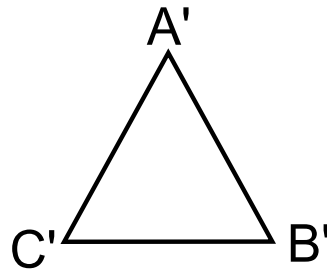
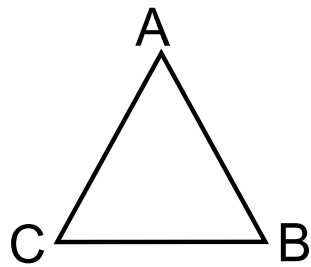
Transitive Property:

- * If 2 Δ 's are \cong to the same Δ , then all 3 Δ 's are \cong .

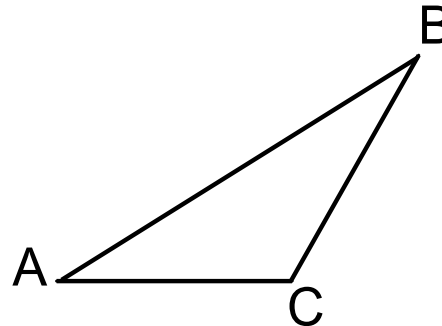
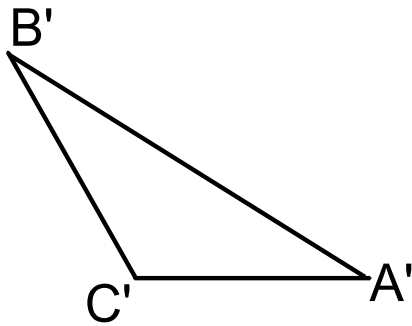
If $\triangle JKL \cong \triangle PQR$, and $\triangle PQR \cong \triangle XYZ$, then $\triangle JKL \cong \triangle XYZ$.

Congruence Transformations:

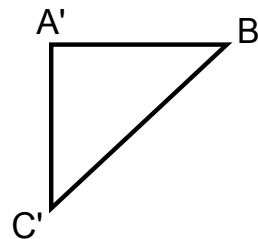
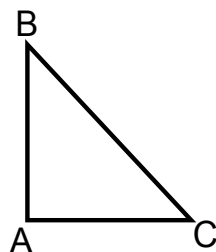
- * Triangles will be \cong if you do one of the following: slide, flip, or turn.
- * The size and shape are preserved when we do a congruence transformation.



Slide



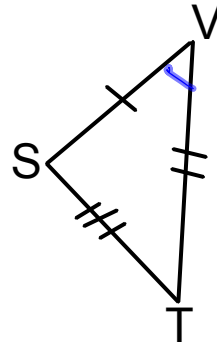
Flip



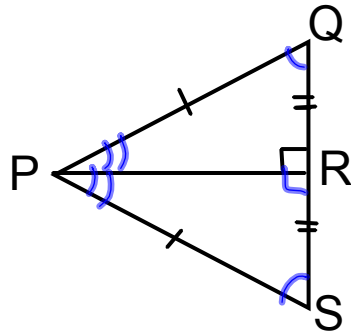
Turn

1. Identify the congruent triangles in each figure.

a.



b.



$$\triangle QRP \cong \triangle SRP$$

2. Name the congruent angles and sides for the pair of congruent triangles.

$$\triangle ABC \cong \triangle EGH$$

$$\angle A \cong \angle E \quad \angle B \cong \angle G \quad \angle C \cong \angle H$$

$$\overline{AB} \cong \overline{EG}$$

$$\overline{BC} \cong \overline{GH}$$

$$\overline{AC} \cong \overline{EH}$$

3. Verify that the following transformation preserves congruence, and name the congruence transformation.

