

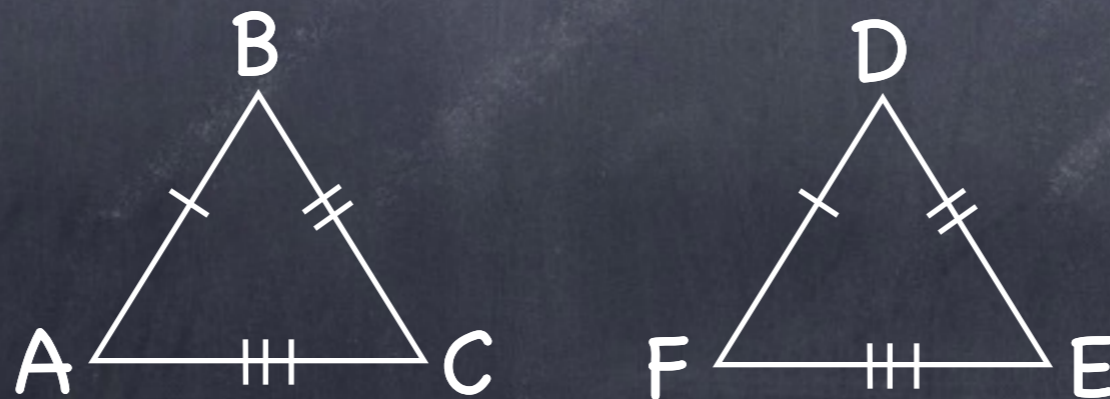
Triangle Congruence

Section 4-5

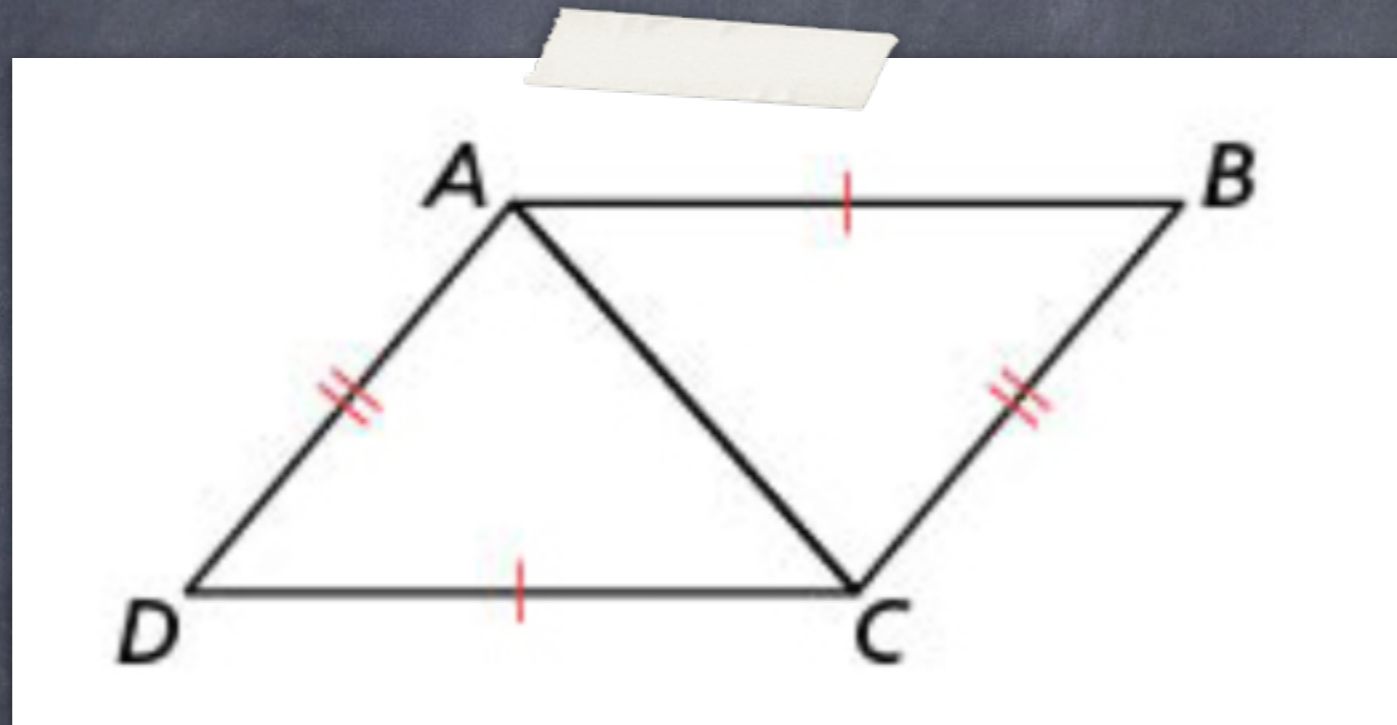
Side-Side-Side Congruence (SSS)

- If three sides of one triangle are congruent to three sides of another, then the triangles are congruent.

If $\overline{AB} \cong \overline{FD}$, $\overline{BC} \cong \overline{DE}$, and $\overline{AC} \cong \overline{FE}$,
then $\triangle ABC \cong \triangle FDE$.



Use SSS to explain why $\triangle ABC \cong \triangle CDA$



$$\overline{AD} \cong \overline{BC}$$

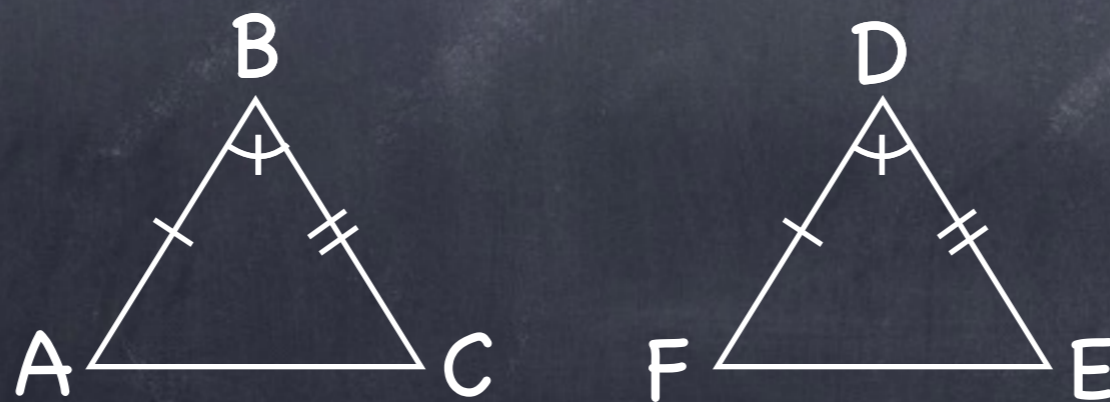
$$\overline{AB} \cong \overline{DC}$$

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

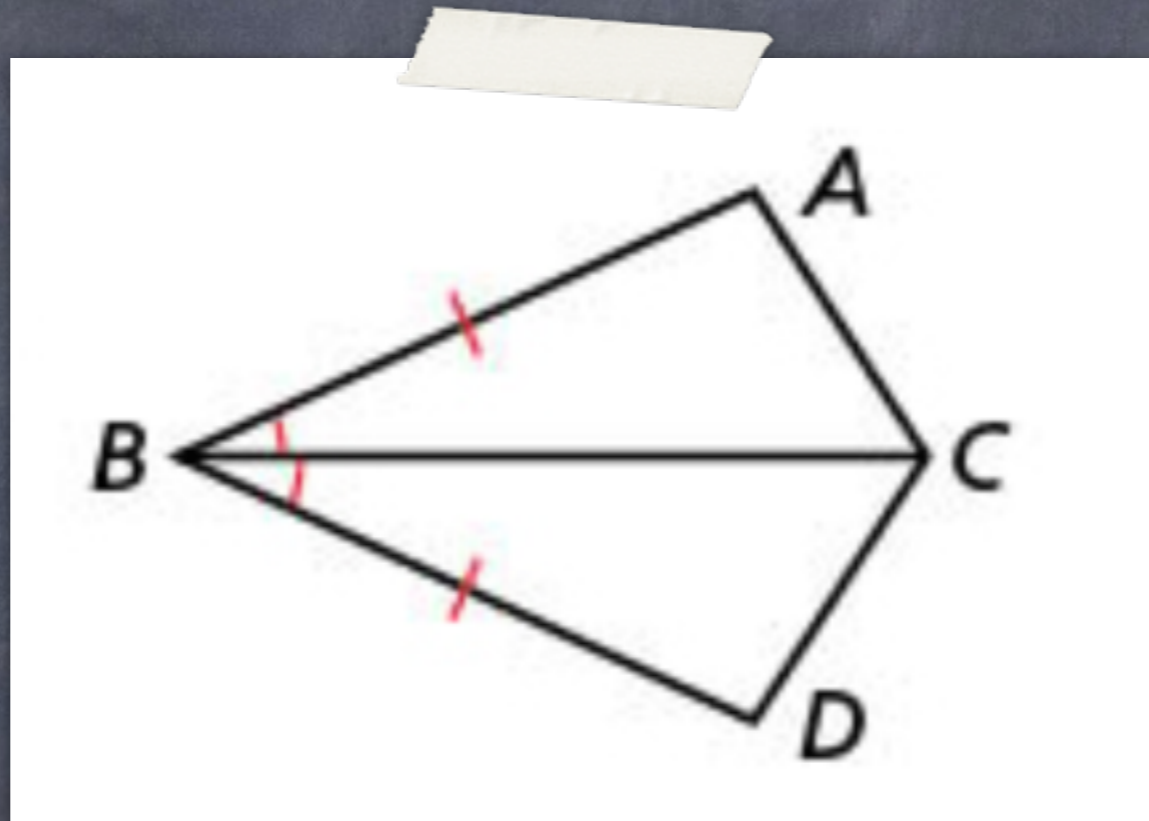
Side-Angle-Side Congruence (SAS)

- If two sides and the included angle of one triangle are congruent to two sides and the included angle of another, then the triangles are congruent.

If $\overline{AB} \cong \overline{FD}$, $\overline{BC} \cong \overline{DE}$, and $\angle B \cong \angle D$,
then $\triangle ABC \cong \triangle FDE$.



Use SAS to explain why $\triangle ABC \cong \triangle DBC$



$$\overline{AB} \cong \overline{DB}$$

$$\angle ABC \cong \angle DBC$$

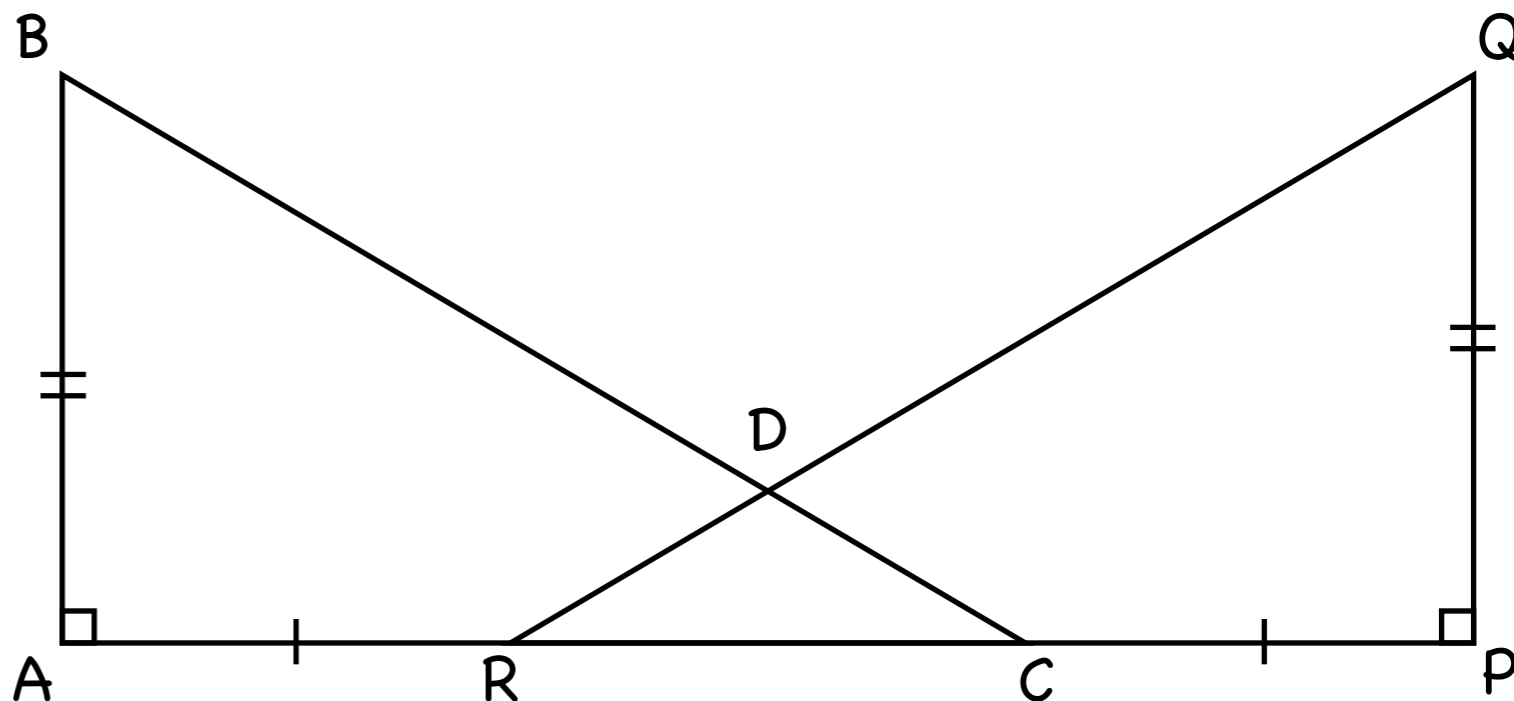
$$\overline{BC} \cong \overline{BC}$$

$$\overline{AR} \cong \overline{CP} \quad \overline{AB} \cong \overline{QP}$$

Prove

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

using SAS



$$\angle BAC \cong \angle QPR$$

$$AR = CP$$

$$RC = RC$$

$$AR + RC = CP + RC$$

$$AR + RC = AC$$

$$CP + RC = PR$$

$$AC = PR$$

$$\overline{AC} \cong \overline{PR}$$

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

Right Angle Congruent Thm

Definition of Congruence

Symmetric Property

Addition Property of Eq.

Segment Addition Postulate

Substitution

Definition of Congruence

SAS