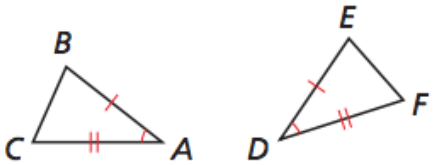
Geometry 5.3 Notes: Side-Angle-Side Triangle Congruence

Side-Angle-Side Congruence Theorem (_____)

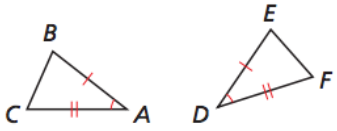
If two sides and the _____ angle of one triangle are _____ to two sides and the _____ angle of a second triangle, then the two triangles are _____.

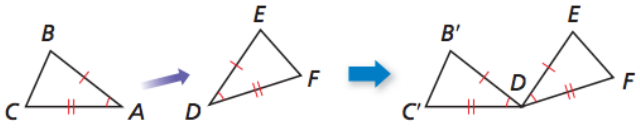


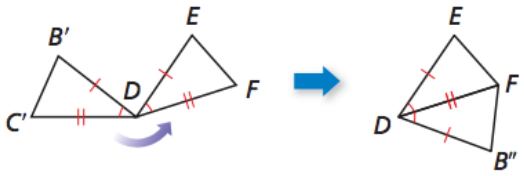
* Included means _____

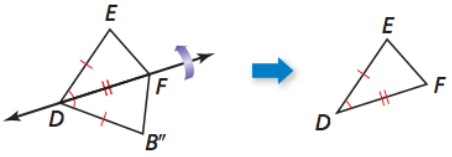
PROOF: Use transformations to prove why the two triangles are congruent.

1. **Given**: $\overline{AB} \cong \overline{DE}, \angle A \cong \angle D, \overline{AC} \cong \overline{DF}$
   Prove: $\Delta ABC \cong \Delta DEF$

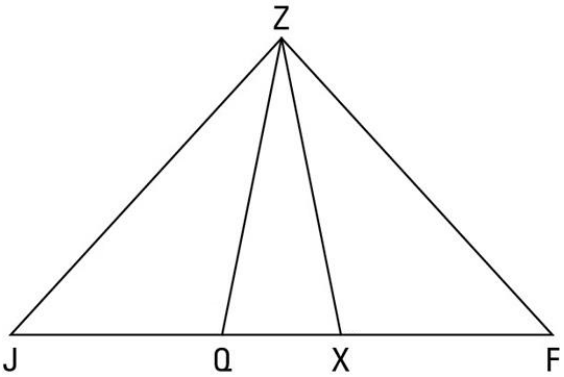


2. 

3. 

4. 

Name the included angle between the pair of sides given:



5. QZ and ZF

6. JQ and ZQ

7. QZ and QX

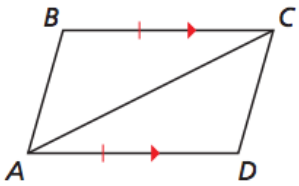
Given a side and the included angle, name the other side:

8. ZJ and $\angle$ J

9. XZ and $\angle$ ZXF

Using the SAS≅ Theorem

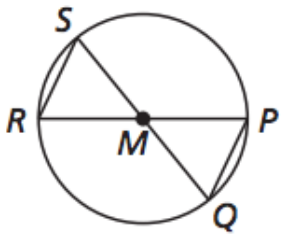
10. Write a two-column proof. **Given**: $\overline{BC} \cong \overline{DA}, \overline{BC} \parallel \overline{DA}$
Prove: $\Delta ABC \cong \Delta CDA$



Statements	Reasons

Using SAS and Properties of Shapes

11. In the diagram, $\overline{QS}$ and $\overline{RP}$ pass through center M of the circle. Prove that $\Delta MRS \cong \Delta MPQ$.



Statements	Reasons