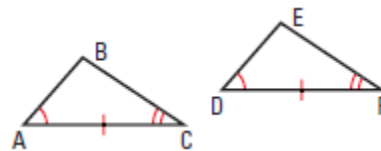


ANGLE-SIDE-ANGLE & ANGLE-ANGLE-SIDE TRIANGLE CONGRUENCE NOTES

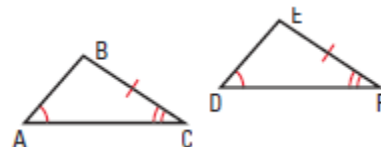
Angle-Side-Angle (ASA) Congruence Postulate

- If two angles and the *included side* of one triangle are congruent two angles and the included *side* of another triangle, then the two triangles are congruent.



Angle-Angle-Side (AAS) Congruence Theorem

- If two angles and the *non-included side* of one triangle are congruent to two angles and the *non-included side* of another triangle, then the two triangles are congruent.
 - ★ Notice, the *side* must come **NEXT** to the same *angle* in **both** triangles.



Which One Do I Use?...How Can I Tell?

- If there are **more sides** marked than angles, then use one of the following:
 - SSS
 - If **ALL three sides** are marked as congruent pairs.
 - SAS
 - If **ONLY two sides** are marked **with** the angle **IN BETWEEN**.
 - HL
 - If **ONLY two sides** are marked **with** a **right angle NOT IN BETWEEN** the marked sides.
 - It will be marked like SSA, but it **MUST** be a **right angle!**
- If there are **more angles** marked than sides, then use one of the following:
 - ASA
 - If **ANY two angles** are marked **with** the side **IN BETWEEN**.
 - AAS
 - If **ONLY two angles** are marked along **with** a side that is **NOT IN BETWEEN**.

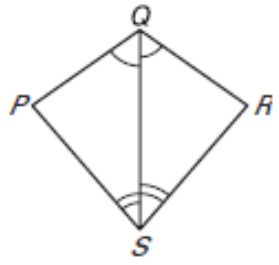
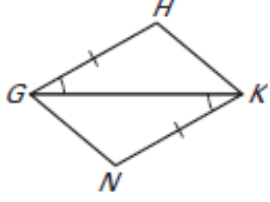
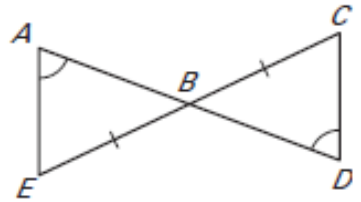
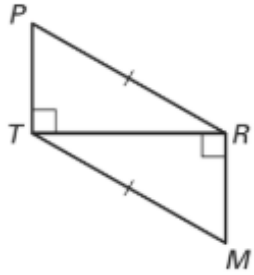
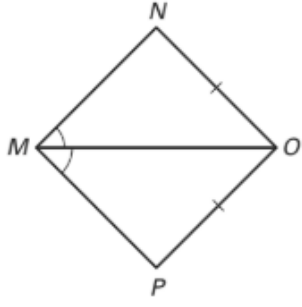
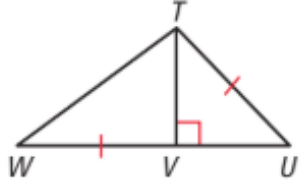
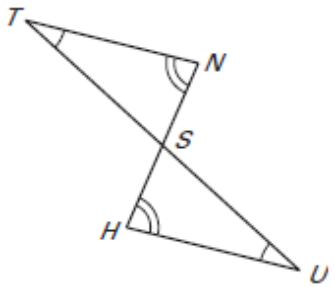
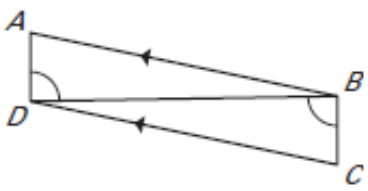
EXAMPLE 1– State the third congruence that must be given to prove that $\triangle DEF \cong \triangle QRT$ using the indicated postulate or theorem.

<p>1. GIVEN: $\angle D \cong \angle Q$ and $\angle E \cong \angle R$ Using ASA Congruence Postulate</p>	<p>2. GIVEN: $\angle F \cong \angle T$ and $\overline{DE} \cong \overline{QR}$ Using AAS Congruence Theorem</p>
<p>3. GIVEN: $\angle F \cong \angle T$ and $\overline{QT} \cong \overline{DF}$ Using SAS Congruence Postulate</p>	<p>4. GIVEN: $\overline{QT} \cong \overline{DF}$ and $\overline{DE} \cong \overline{QR}$ Using SSS Congruence Postulate</p>

EXAMPLE 2 - Decide whether you can use the given information to prove that $\triangle LMN \cong \triangle PQR$. Explain your reasoning.

<p>1. $\angle M \cong \angle Q$ $\angle N \cong \angle R$ $\overline{NL} \cong \overline{RP}$</p>	<p>2. $\angle L \cong \angle R$ $\angle M \cong \angle Q$ $\overline{LM} \cong \overline{PQ}$</p>
--	--

EXAMPLE 3 - Is it possible to prove the triangles are congruent? If so, state the postulate or theorem you would use.

<p>1.</p> 	<p>2.</p> 	<p>3.</p> 
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 
<p>7.</p> 	<p>8.</p> 	<p>9. $\triangle JKL, \triangle MLK$</p> 