

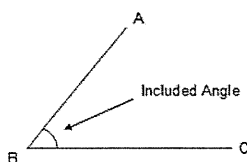
Name _____ Date _____ Period _____

CCGPS Analytic Geometry – September 16, 2014

Triangle Congruence Notes

Day 2: SAS, SSA, & HL

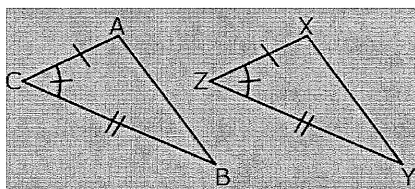
When 2 lines, rays or segments meet at a common endpoint, then the angle formed between them is the _____ angle.



Does Side–Angle–Side (SAS) exist?

WHAT DO YOU THINK? Will all triangles be congruent if 2 sides and the included angle are the same measure?

Side-Angle-Side (SAS) Postulate – If _____ and the _____ of a triangle are congruent to _____ and the _____ of another triangle, then the two triangles are _____.



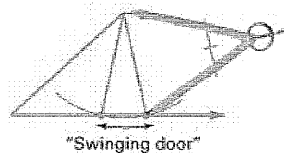
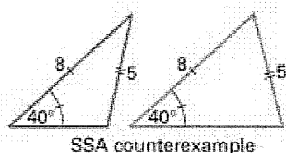
- Since two sides and the included angle are congruent $\triangle ABC \cong \triangle XYZ$ are congruent by the Side-Angle-Side (SAS) Postulate.
- Since $\triangle ABC \cong \triangle XYZ$ are congruent by Side-Angle-Side (SAS) Postulate, then _____, _____, and _____, because _____.

Does Side–Side–Angle (SSA) exist?

WHAT DO YOU THINK? Will all triangles be congruent if 2 sides and the nonincluded angle have the same measure?

Side–Side–Angle (SSA) _____ exist because the third side could be a _____ length.

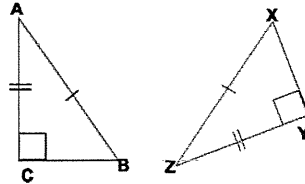
Therefore, the triangles _____ congruent.



Hypotenuse Leg (HL): a special case of SSA

In a _____ triangle, you can find the measure of the third side if you know the measures of the other 2 sides by using the _____. Thus, creating a special case of SSA known as _____.

If the _____ and a _____ of one right triangle are _____ to the _____ and a _____ of another right triangle, then the two triangles are _____.



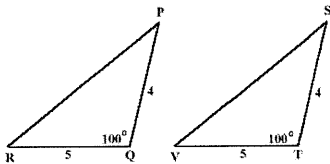
- Since the hypotenuse and leg of the right triangles are congruent, then $\triangle ABC \cong \triangle XYZ$ by the Hypotenuse Leg (HL) Theorem.
- Since $\triangle ABC \cong \triangle XYZ$ are congruent by Hypotenuse-Leg (HL) Theorem, then _____, _____, and _____ because _____.

RECAP

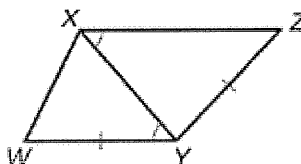
Side-Side-Side (SSS)		Angle-Angle-Angle (AAA)	
Side-Angle-Side (SAS)		Side-Side-Angle (SSA or ASS)	
Hypotenuse-Leg (HL)			

Examples: Determine if the triangles are congruent or not. If so, list the reason and a congruence statement. Also, list the congruent corresponding parts.

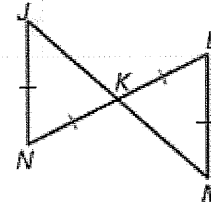
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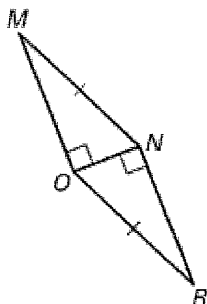
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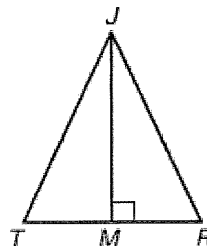
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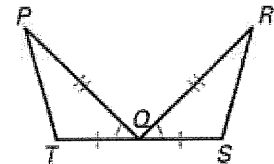
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5.



6.



State the third congruence that must be given to prove that $\triangle ABC \cong \triangle FED$ using the indicated postulate or theorem.

7. Given: $\overline{BC} \cong \overline{ED}$, $\overline{AC} \cong \overline{FD}$, _____ \cong _____ using SAS.

8. Given: $\overline{AB} \cong \overline{FE}$, $\overline{AC} \cong \overline{FD}$, _____ \cong _____ using SSS.

9. Given: $\overline{BC} \cong \overline{ED}$, $\angle B$ is a right angle and $\angle B \cong \angle E$, _____ \cong _____ using HL.

