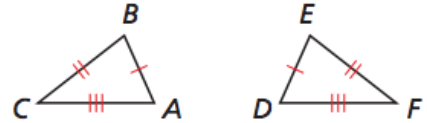


Geometry 5.5 Notes: Side-Side-Side Triangle Congruence / HL Triangle Congruence

Side-Side-Side Congruence Theorem (_____)

If three sides of one triangle are congruent to three sides of a second triangle, then the two triangles are congruent.

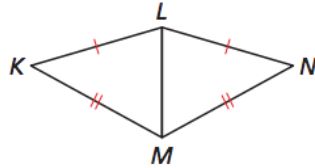


Using the SSS \cong Theorem

1. Write a two-column proof.

Given: $\overline{KL} \cong \overline{NL}$, $\overline{KM} \cong \overline{NM}$

Prove: $\triangle KLM \cong \triangle NLM$

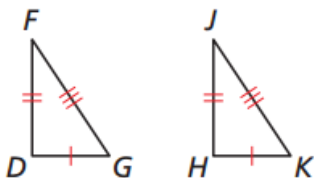


Statements

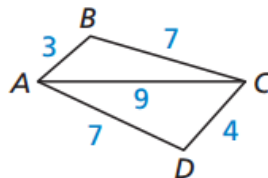
Reasons

2. Determine whether the congruence statement is true. Explain your reasoning.

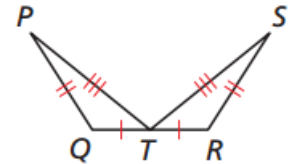
a. $\triangle DFG \cong \triangle HJK$



b. $\triangle ACB \cong \triangle CAD$



c. $\triangle QPT \cong \triangle RST$



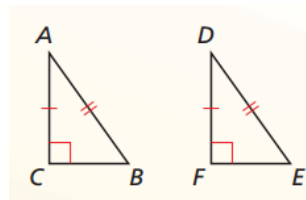
You know that SAS \cong and SSS \cong are valid methods for proving that triangles are congruent. What about SSA \cong ?

While $SSA \cong$ is not valid in general, there is, a special case for _____.

Hypotenuse-Leg Congruence Theorem (_____)

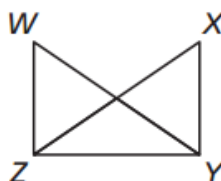
If the hypotenuse and a leg of a right triangle are congruent to the hypotenuse and a leg of the second right triangle, then the two triangles are congruent.

Hint: Think “90°-Side-Side” or “Right-Side-Side”



Using $HL \cong$

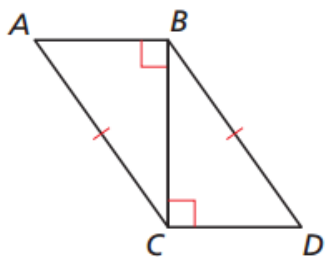
3. **Given:** $\overline{WY} \cong \overline{XZ}$, $\overline{WZ} \perp \overline{ZY}$, $\overline{XY} \perp \overline{ZY}$
Prove: $\triangle WYZ \cong \triangle XZY$



Statements

Reasons

4. **Given:** The diagram below
Prove: $\triangle ABC \cong \triangle DCB$



Statements

Reasons