

Name, Date, Hour:  <b>Key</b>	Learning Target: 4.4: Prove $\Delta$ 's are $\cong$ by SAS + HL	Homework:  Day 4
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**BOX 1 - Proving Triangles Congruent by Side-Angle-Side and Hypotenuse-Leg**

Included Angle	Angle formed by the two $\cong$ sides	<p><math>\angle A</math> is included <math>\angle D</math> is included</p>
Side-Angle-Side Congruence Postulate	if two sides + an included angle of one $\Delta$ are $\cong$ to two sides + an included angle of another $\Delta$ then the $\Delta$ 's are $\cong$	<p><math>\Delta RST \cong \Delta UVW</math></p>
Hypotenuse	Side across from right angle	<p><math>\rightarrow</math> hypotenuse</p>
Leg	The other two sides of a right $\Delta$	<p>legs</p>
Hypotenuse-Leg (HL) Congruence Theorem	if the hypotenuse and leg of one right $\Delta$ are $\cong$ to the hypotenuse + leg of another right $\Delta$ then the $\Delta$ 's are $\cong$ .	<p><math>\Delta ABC \cong \Delta DEF</math></p>

**BOX 2 - USING SAS**

Write a proof.

GIVEN  $\triangleright \overline{BC} \cong \overline{DA}, \overline{BC} \parallel \overline{AD}$   
 PROVE  $\triangleright \Delta ABC \cong \Delta CDA$

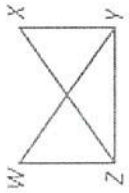
Statements	reasons
① $\overline{BC} \cong \overline{DA}$	① given
$\overline{BC} \parallel \overline{AD}$	② reflexive prop of $\cong$
② $\overline{AC} \cong \overline{CA}$	③ AIA Thm
③ $\angle DAC \cong \angle BCA$	④ SAS
④ $\Delta ABC \cong \Delta CDA$	

BOX 3 - Using HL

Write a proof.

GIVEN  $\overline{WY} \cong \overline{XZ}$ ,  $\overline{WZ} \perp \overline{ZY}$ ,  $\overline{XY} \perp \overline{ZY}$

PROVE  $\triangle WYZ \cong \triangle XZY$

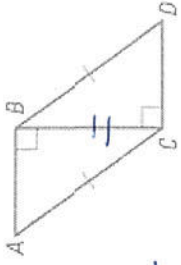


S	R
① $\overline{WY} \cong \overline{XZ}$ $\overline{WZ} \perp \overline{ZY}$ $\overline{XY} \perp \overline{ZY}$	① given
② $\angle WZY = 90^\circ$ $\angle XYZ = 90^\circ$	② def of $\perp$
③ $\angle WZY \cong \angle XYZ$	③ substitution
④ $\overline{ZY} \cong \overline{YZ}$	④ reflexive prop of $\cong$
⑤ $\triangle WYZ \cong \triangle XZY$	⑤ HL

BOX 4 - Try on your own!

Given: see diagram

Prove:  $\triangle ABC \cong \triangle DCB$



S	R
① $\overline{AC} \cong \overline{BD}$	① given
② $\overline{BC} \cong \overline{CB}$	② reflexive prop of $\cong$
③ $\triangle ABC \cong \triangle DCB$	③ HL