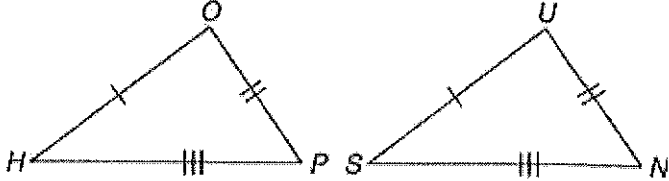
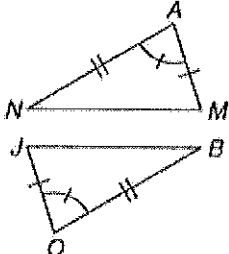
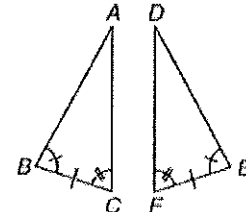
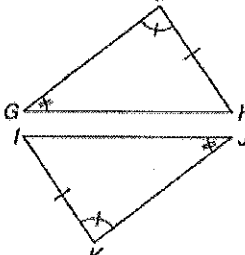
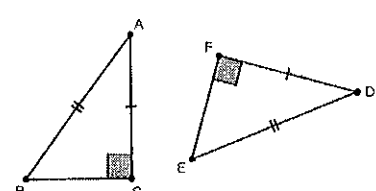
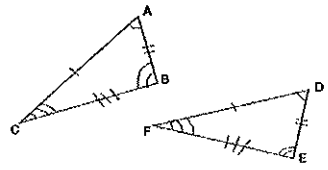
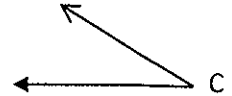
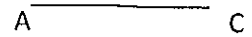
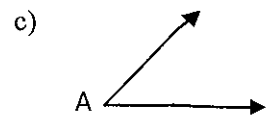
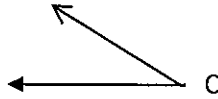
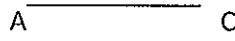
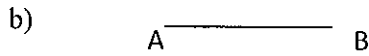
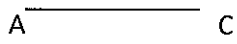
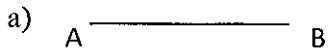


TRIANGLE CONGRUENCE POSTULATES

<p>SSS Congruence Postulate If the three sides of one triangle are congruent to the three sides of another triangle, then the triangles are congruent. (Lesson 4.4)</p>	 <p style="text-align: center;">$\triangle HOP \cong \triangle SUN$ by SSS</p>
<p>SAS Congruence Postulate If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent. (Lesson 4.4)</p>	 <p style="text-align: center;">$\triangle MAN \cong \triangle JOB$ by SAS</p>
<p>ASA Congruence Postulate If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent. (Lesson 4.5)</p>	 <p style="text-align: center;">$\triangle ABC \cong \triangle DEF$ by ASA</p>
<p>AAS Congruence Postulate If two angles and a non-included side of one triangle are congruent to the corresponding angles and side of another triangle, then the triangles are congruent. (Lesson 4.5)</p>	 <p style="text-align: center;">$\triangle FGH \cong \triangle KJI$ by AAS</p>
<p>HL Congruence Theorem If the hypotenuse and leg of a right triangle are congruent to another right triangle's hypotenuse and leg, then the two triangles are congruent.</p>	 <p style="text-align: center;">$\triangle ABC \cong \triangle DEF$ by HL</p> <p style="text-align: center;">http://www.mathwarehouse.com/geometry/congruent_triangles/hypotenuse-leg-theorem.php</p>
<p>CPCTC Corresponding Parts of Congruent Triangles are Congruent</p>	<p>If $\triangle ABC \cong \triangle DEF$, then $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, $\overline{AC} \cong \overline{DF}$, $\angle ABC \cong \angle DEF$, $\angle ACB \cong \angle DFE$, $\angle CAB \cong \angle FDE$, $\angle CAB \cong \angle FDE$</p> 

TRIANGLE CONGRUENCE POSTULATES

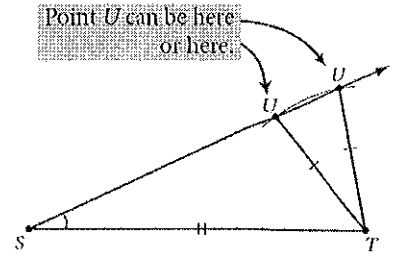
Construct a triangle, more than one if possible, using the following:



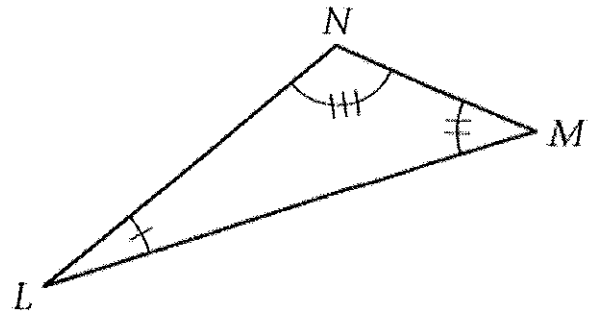
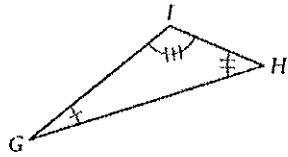
Draw a triangle with the following interior angles 45, 45, 90.

TRIANGLE CONGRUENCE POSTULATES

Why did SSA not work?



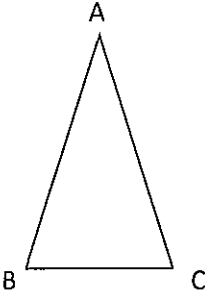
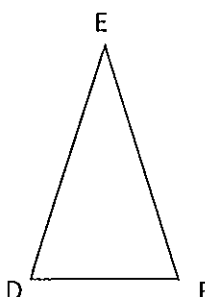
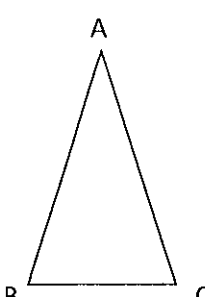
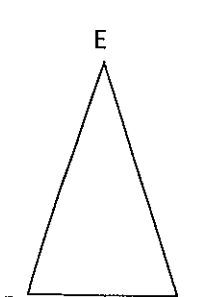
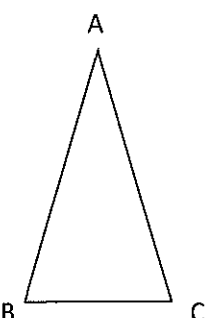
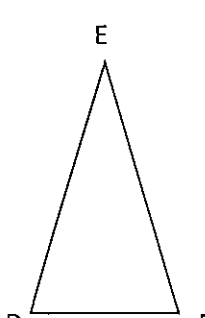
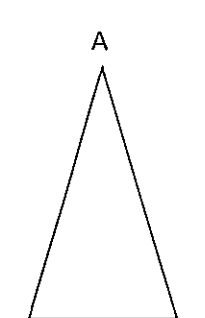
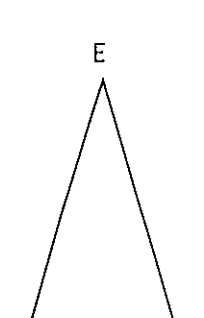
Why did AAA not work?



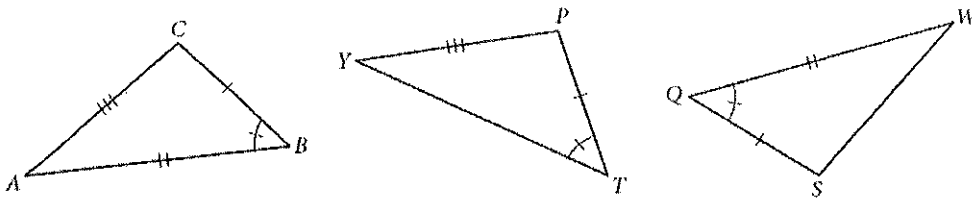
TRIANGLE CONGRUENCE POSTULATES

Mark the following triangles given the stated congruent triangle postulate.

$$\triangle ABC \cong \triangle DEF$$

<p>SSS</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>	<p>SAA</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>
<p>ASA</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>	<p>SAS</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>

Determine which triangles are congruent and why?

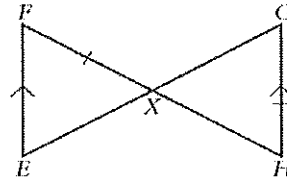
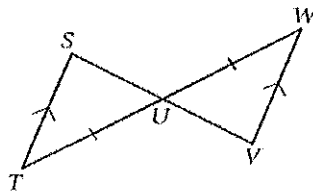
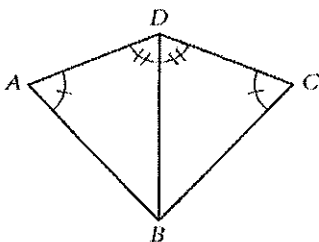


Using your previous postulates mark congruent angles and sides if they exist and then find the corresponding congruent triangle. State the reason the two triangles are congruent.

a. $\triangle ADB \cong \triangle$ _____

b. $\triangle STU \cong \triangle$ _____

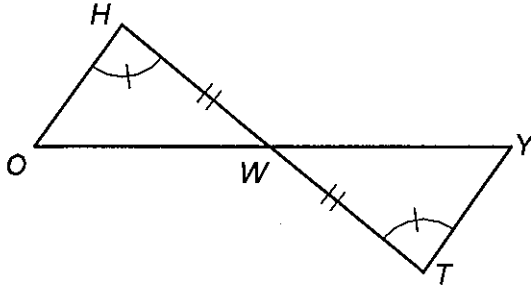
c. $\triangle EFX \cong \triangle$ _____



TRIANGLE CONGRUENCE POSTULATES

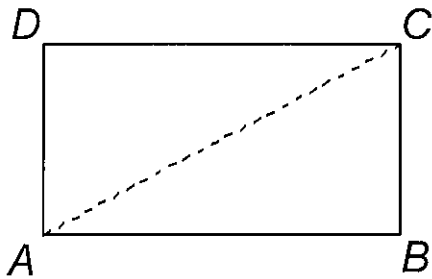
1. $\triangle OHW \cong \triangle$ _____

Which postulate supports the congruence statement?(if not enough info, write not enough info) _____



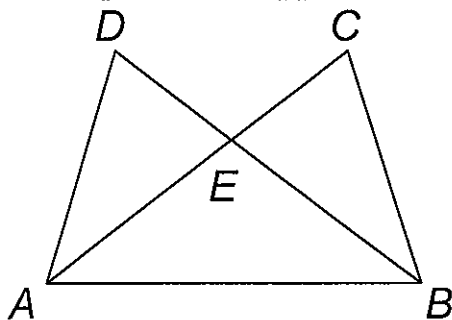
2. $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ (hint: transversal?), $\triangle SAD \cong \triangle SBC$, $\triangle ABC \cong \triangle$ _____

Which postulate supports the congruence statement?(if not enough info, write not enough info) _____



3. $\triangle SAC \cong \triangle SBD$, $\triangle SAD \cong \triangle SBC$, $\triangle ADB \cong \triangle$ _____

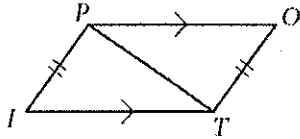
Which postulate supports the congruence statement? _____



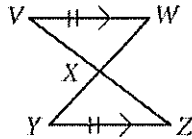
TRIANGLE CONGRUENCE POSTULATES

In Exercises 1–6, name a triangle congruent to the given triangle and state the congruence conjecture. If you cannot show any triangles to be congruent from the information given, write “cannot be determined” and explain why.

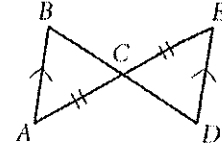
1. $\triangle PIT \cong \triangle$ _____



2. $\triangle XVW \cong \triangle$ _____

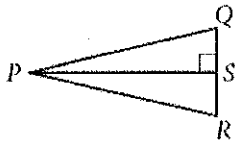


3. $\triangle ECD \cong \triangle$ _____

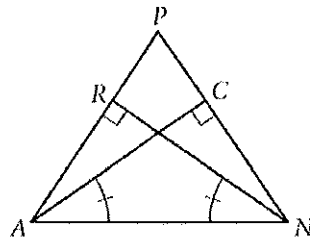


4. \overline{PS} is the angle bisector of $\angle QPR$.

$\triangle PQS \cong \triangle$ _____

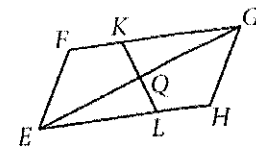


5. $\triangle ACN \cong \triangle$ _____



6. $EFGH$ is a parallelogram.
 $GQ = EQ$.

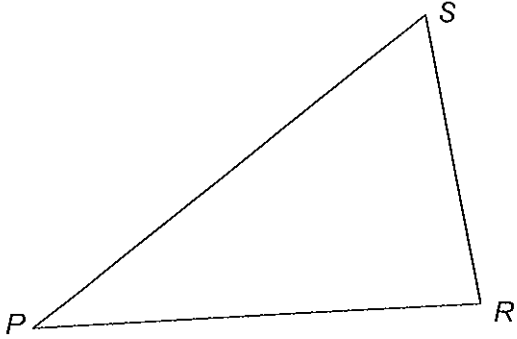
$\triangle EQL \cong \triangle$ _____



TRIANGLE CONGRUENCE POSTULATES

Review:

Construct the $\triangle ABC$ so that it is congruent to $\triangle PSR$ using ASA



Construct the $\triangle ABC$ so that it is congruent to $\triangle PSR$ using SSS

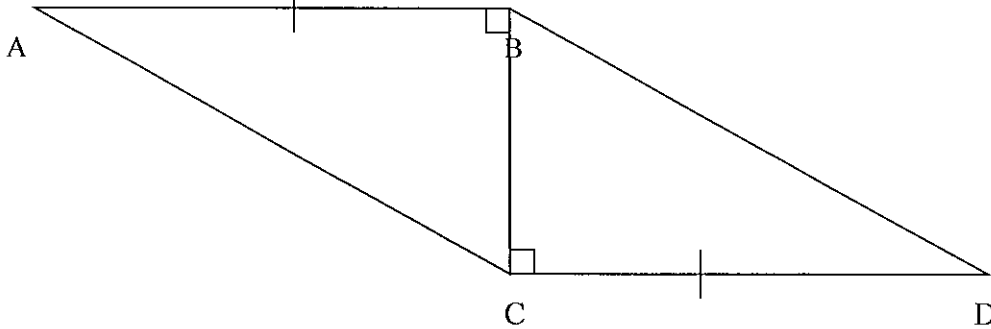
Construct the $\triangle ABC$ so that it is congruent to $\triangle PSR$ using SAS

TRIANGLE CONGRUENCE POSTULATES

3.2 CPCTC – Corresponding Parts of Congruent Triangles are Congruent

1. $\triangle ABC \cong \triangle$ _____.

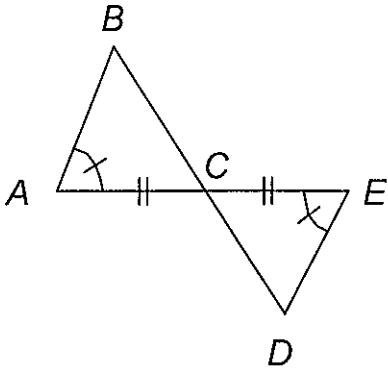
Which postulate supports the congruence statement? _____



Because of _____ both triangles are congruent. Which means $sAC \cong sDB$, $\angle CBD \cong \angle BCA$, and $\angle CAB \cong \angle BDC$

2. $\triangle ABC \cong \triangle$ _____

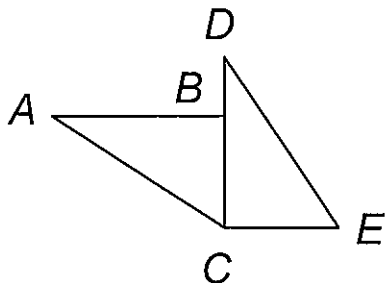
Which conjecture supports the congruence statement? _____



Because of _____ both triangles are congruent. Which means $sAB \cong sED$, $sBC \cong sDC$, $\angle B \cong \angle D$, and $\angle DCE \cong \angle BCA$

3. $sAB \perp sCD$, $sAB \cong sCD$, $EC \perp sCD$, $\angle A \cong \angle D$, $\triangle ABC \cong \triangle$ _____

Which postulate supports the congruence statement? _____



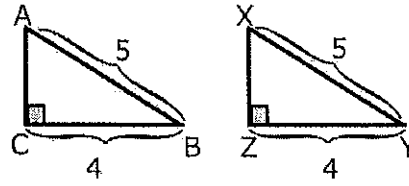
Because of _____ both triangles are congruent. Which sides and angles are congruent?

Warm Up→

1) How long is \overline{AC} ?

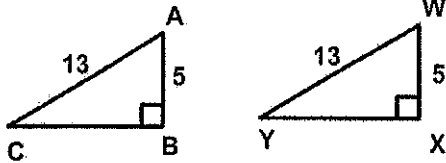
2) How long is \overline{XZ} ?

3) Is $\triangle ABC \cong \triangle XYZ$?

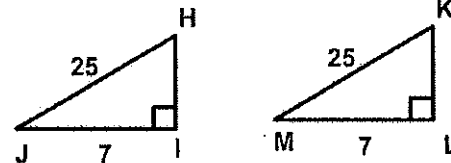


Look at the pairs of triangles below. Are they congruent?

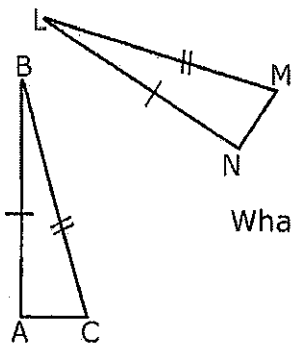
Pair A



Pair B

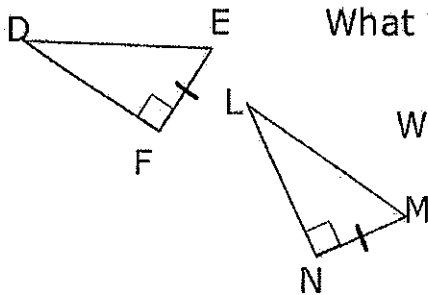


What additional information would you need to prove the triangles are congruent using the Hypotenuse-Leg Postulate?



What is already known?

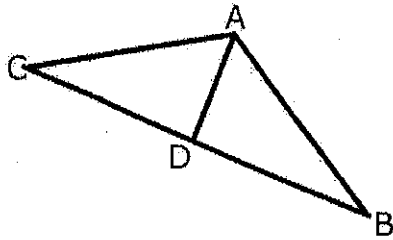
What is needed for Hypotenuse-leg?



What is already known?

What is needed for Hypotenuse-leg?

Model Proof



Web PowerPoint Solution

Given

\overline{AD} is perpendicular to \overline{CB}

$\overline{CA} = \overline{AB}$

Proof A)

Given: $\overline{AD} \perp \overline{BC}$, $\overline{BA} \cong \overline{AC}$

Prove: $\triangle ABD \cong \triangle ACD$

