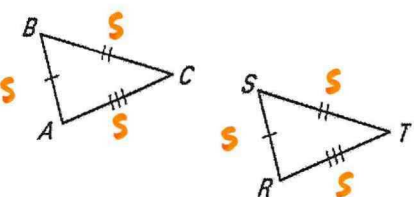
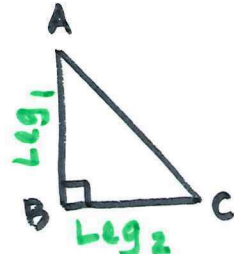
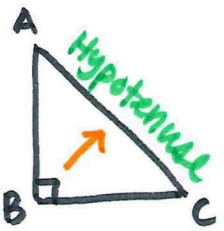
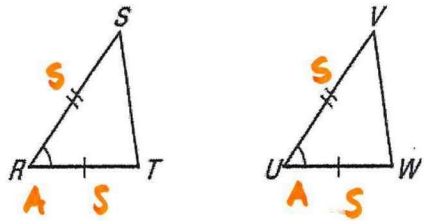


Prove Triangles are Congruent by - SSS, SAS, HL, ASA, AAS

Vocabulary	Definition	Example
<p>4.3</p> <p>SIDE-SIDE-SIDE (SSS) CONGRUENCE POSTULATE</p>	<p>If three sides of one triangle are congruent to three sides of a second triangle, then the two triangles are congruent.</p> <p>S = side</p>	 <p>If Side $\overline{AB} \cong \overline{RS}$, Side $\overline{BC} \cong \overline{ST}$, and Side $\overline{CA} \cong \overline{TR}$, then $\triangle ABC \cong \triangle RST$ by SSS</p>
<p>4.4</p> <p>LEG of a RIGHT TRIANGLE</p>	<p>In a right triangle, a <u>side adjacent</u> to the <u>right angle</u> is called a <u>leg</u>.</p> <p>2 legs in a right triangle.</p>	 <p>The legs are the 2 sides that form the right angle. In $\triangle ABC$, if $\angle B$ is the right angle, then \overline{AB} and \overline{BC} are the legs.</p>
<p>HYPOTENUSE</p>	<p>In a right triangle, the <u>side opposite</u> the <u>right angle</u> is called the <u>hypotenuse</u>.</p>	 <p>If $\angle B$ is the right angle of $\triangle ABC$, then \overline{AC} is the hypotenuse.</p>
<p>SIDE-ANGLE-SIDE (SAS) CONGRUENCE POSTULATE</p>	<p>If <u>two sides</u> and the <u>included angle</u> of one triangle are congruent to <u>two sides</u> and the <u>included angle</u> of a second triangle, then the two triangles are congruent.</p> <p>*INCLUDED ANGLE- In a triangle, the <u>angle formed by two sides</u> is the included angle for those two sides.</p> <p>A = angle</p>	 <p>If Side $\overline{RS} \cong \overline{UV}$, Angle $\angle R \cong \angle U$, and Side $\overline{RT} \cong \overline{UW}$, then $\triangle RST \cong \triangle UVW$ by SAS</p>

4.4

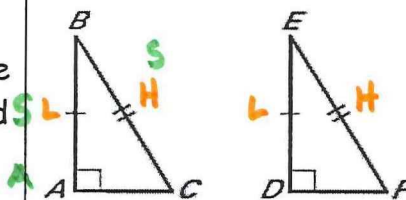
*only for Right Δ s

HYPOTENUSE-LEG
(HL) CONGRUENCE
THEOREM

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

H = hypotenuse

L = leg



If hypotenuse $\overline{BC} \cong \overline{EF}$,
and leg $\overline{AB} \cong \overline{DE}$,
then $\Delta ABC \cong \Delta DEF$
by HL

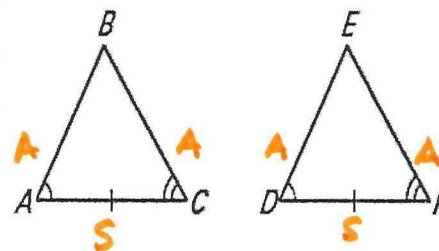
If you get ASS, then check for a $\perp \Delta$ and put **HL** or SSA

4.5

ANGLE-SIDE-
ANGLE (ASA)
CONGRUENCE
POSTULATE

If two angles and the included side of one triangle are congruent to two angles and the included side of a second triangle, then the two triangles are congruent.

*INCLUDED SIDE- Suppose you were given the measure of two angles in a triangle. This refers to the side between them.



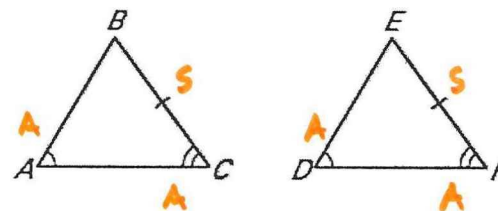
If Angle $\angle A \cong \angle D$,
Side $\overline{AC} \cong \overline{DF}$, and
Angle $\angle C \cong \angle F$,
then $\Delta ABC \cong \Delta DEF$
by ASA

ANGLE-ANGLE-
SIDE (AAS)
CONGRUENCE
THEOREM

SAA

If two angles and a non-included side of one triangle are congruent to two angles and the corresponding non-included side of a second triangle then the two triangles are congruent.

*Non-included = the side that is not between the 2 angles



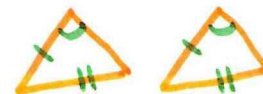
If Angle $\angle A \cong \angle D$,
Angle $\angle C \cong \angle F$, and
Side $\overline{BC} \cong \overline{EF}$,
then $\Delta ABC \cong \Delta DEF$
by AAS

To prove Δ s are \cong :

SSS
SAS
ASA
AAS
HL \rightarrow only for right Δ s

You can NOT use : AAA

ASS
SSA



NOT \cong