12.4 online hw due today
Ch 11 Test Retakes due next Friday

Jan 4-11:47 PM

Essential Question

How can you prove two triangles are congruent?

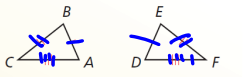
Essential Question

Theorem

Side-Side-Side (SSS) Congruence Theorem

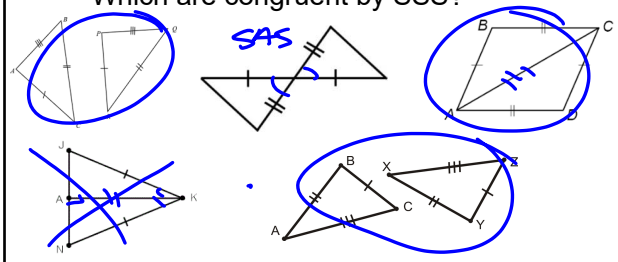
If three sides of one triangle are congruent to three sides of a second triangle, then the two triangles are congruent.

If $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, and $\overline{AC} \cong \overline{DF}$, then $\triangle ABC \cong \triangle DEF$.



Theorem

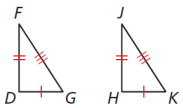
Which are congruent by SSS?



Jan 4-11:55 PM

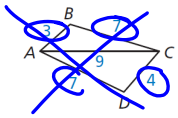
Decide whether the congruence statement is true. Explain

1. $\triangle DFG \cong \triangle HJK$

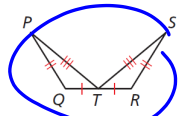


yes; SSS

2. $\triangle ACB \cong \triangle CAD$



3. $\triangle QPT \cong \triangle RST$

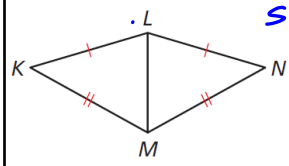


yes; SSS

Monitoring Progress 1-3

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

Prove $\triangle KLM \cong \triangle NLM$



Statement	Reason
1. $\overline{KL} \cong \overline{NL}$, $\overline{KM} \cong \overline{NM}$	1. Given
2. $\overline{LM} \cong \overline{LM}$	2. Reflexive
3. $\triangle KLM \cong \triangle NLM$	3. SSS Congruence Thm.

S S

Example 1

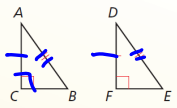
Theorem

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 right triangle, then the two triangles are congruent.

If $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$, and $m\angle C = m\angle F = 90°$, then $\triangle ABC \cong \triangle DEF$.

Proof BigIdeasMath.com

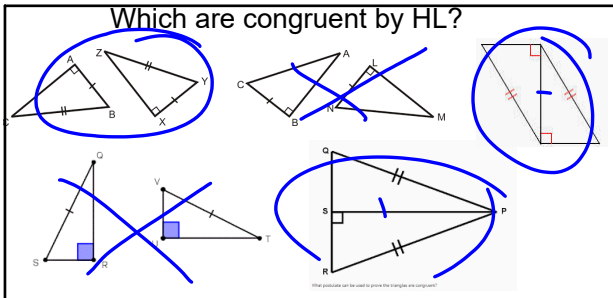


Theorem

A **right triangle** is the only way SSA can work and we call it HL, never....

Jan 4-11:52 PM

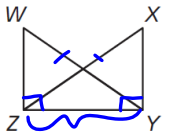
Which are congruent by HL?



Jan 4-11:58 PM

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

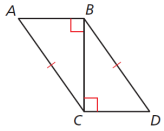
Prove $\triangle WYZ \cong \triangle XZY$



Statement	Reason
1. $\overline{WY} \cong \overline{XZ}$, $\overline{WZ} \perp \overline{ZY}$, $\overline{XY} \perp \overline{ZY}$	1. Given
2. $\overline{YZ} \cong \overline{YZ}$	2. Reflexive
3. $\triangle WYZ \cong \triangle XZY$	3. HL Thm.

Example 3

Redraw $\triangle ABC$ and $\triangle DCB$ side by side with corresponding parts in the same position.



Use the info in the diagram to prove $\triangle ABC \cong \triangle DCB$.

Statement	Reason

Monitoring Progress 7-8

due Tuesday

12.5 online hw

Pg 622-624 #s 1, 2, 3-23 odd, 30, 31, 38, 40

Jan 5-12:02 AM