

Name _____ Per _____

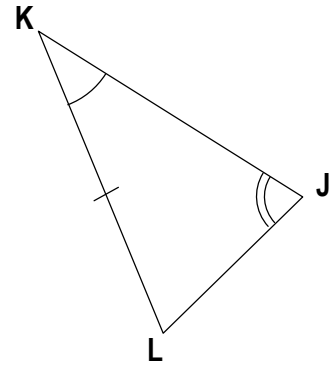
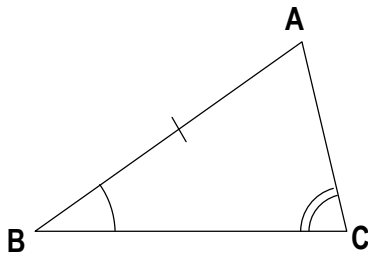
LO: I can prove that AAS and HL are shortcuts for proving that two triangles are congruent and can use them to determine whether or not two triangles are congruent and write a proof.

DO NOW On the back of this packet

(1) **Congruence: A sequence of rigid transformations. AAS**

transparencies, dry erase markers, eraser, compass, straightedge

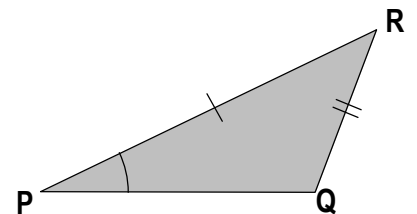
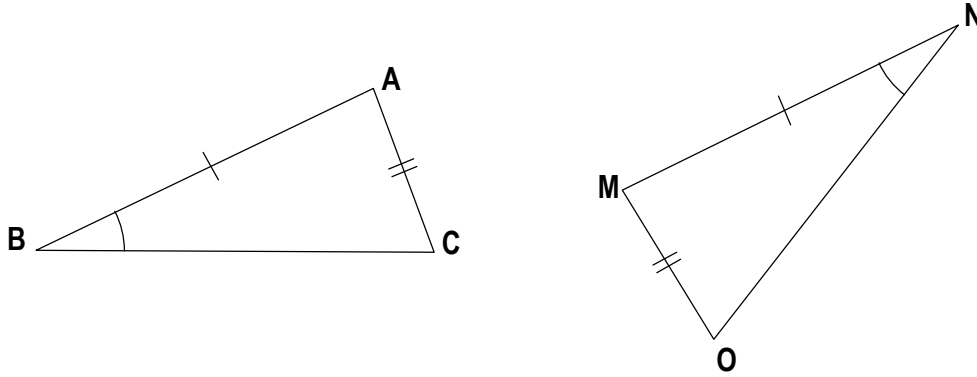
Two shapes are congruent if there is a sequence of transformations (1 or more) that map one shape to the other. Determine a sequence of transformations that maps $\triangle LKJ$ to $\triangle ABC$. Write a description and justification for each step in the sequence of transformations.



Is AAS enough to prove/guarantee 2 triangles are congruent? _____

(2) **Congruence: A sequence of rigid transformations. SSA**

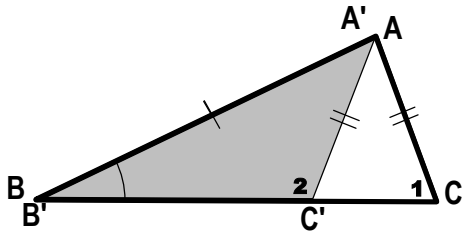
Two shapes are congruent if there is a sequence of transformations (1 or more) that map one shape to the other. Determine a sequence of transformations that maps $\triangle MNO$ to $\triangle ABC$. Write a description and justification for each step in the sequence of transformations.



Is SSA enough to prove/guarantee 2 triangles are congruent? _____

(3) What about SSA for right triangles?

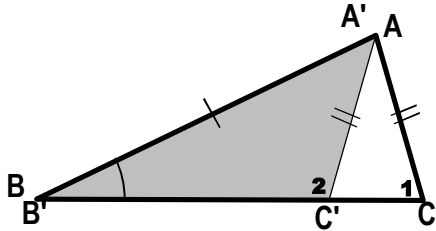
Focus on the shaded triangle and the large triangle (bold sides).



Angle 1 is an _____ angle

Angle 2 is an _____ angle

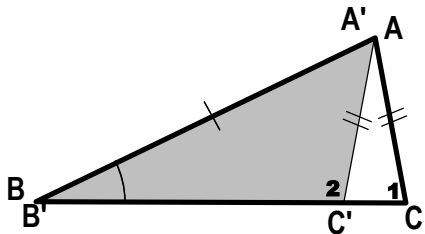
The shaded and large triangles **are / are not** congruent?



Angle 1 is an _____ angle

Angle 2 is an _____ angle

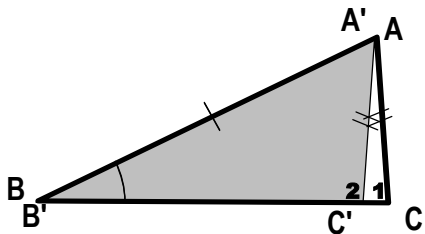
The shaded and large triangles **are / are not** congruent?



Angle 1 is an _____ angle

Angle 2 is an _____ angle

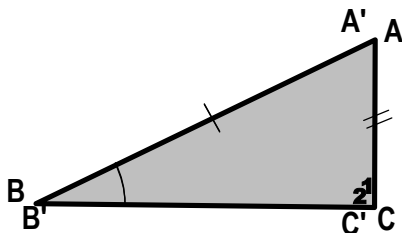
The shaded and large triangles **are / are not** congruent?



Angle 1 is an _____ angle

Angle 2 is an _____ angle

The shaded and large triangles **are / are not** congruent?



Angle 1 is a _____ angle

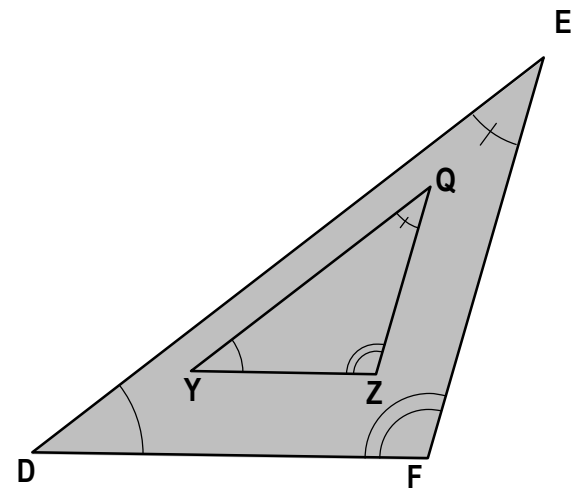
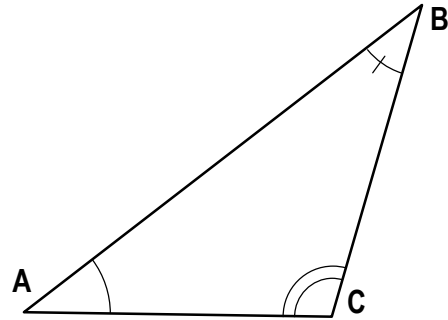
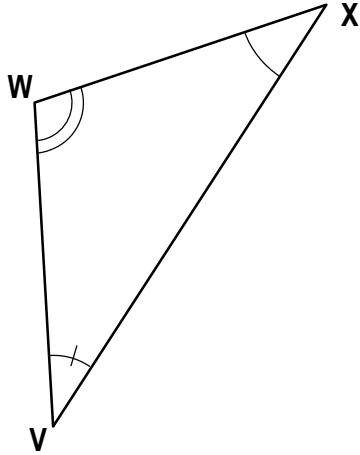
Angle 2 is a _____ angle

The shaded and large triangles **are / are not** congruent?

Because SSA is really a _____ a _____ and a _____
so we don't call it SSA, but instead we call it HL≅.

Is HL enough to prove/guarantee 2 triangles are congruent? _____

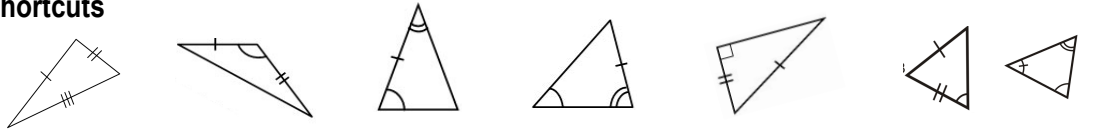
- (4) Two shapes are congruent if there is a sequence of transformations (1 or more) that map one shape to the other. Determine a sequence of transformations that maps $\triangle XVW$ to $\triangle ABC$. Write a description and justification for each step in the sequence of transformations.



AAA does / does not guarantee that 2 triangles are congruent.

(5) **Congruent Triangle Shortcuts**

If I see:



My reason will be: _____

Complete each statement below:

1.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

2.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

3.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

4.
 $\triangle GHJ \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

5.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

6.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

7.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

8.
 $\triangle DEF \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

9.
 $\triangle JKL \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

10.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

11.
 $\triangle ABC \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

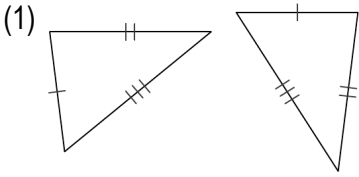
12.
 $\triangle MNO \cong \triangle \underline{\hspace{1cm}}$ by $\underline{\hspace{1cm}}$

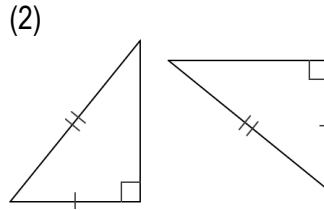
(6) **Exit Ticket**

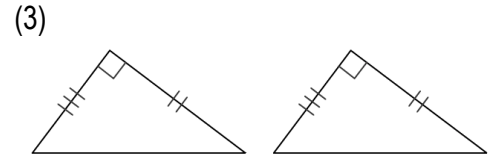
ON THE LAST PAGE

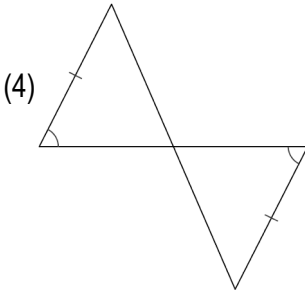
□ (7) Homework

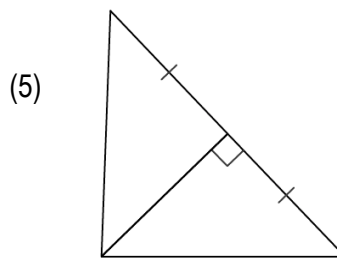
Determine whether the triangles are congruent by SAS, ASA, SSS, AAS, or HL congruence.

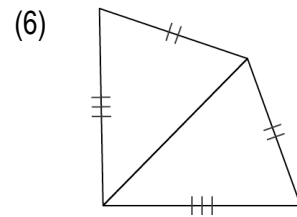


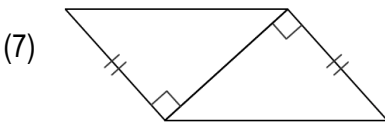


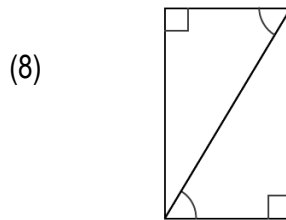


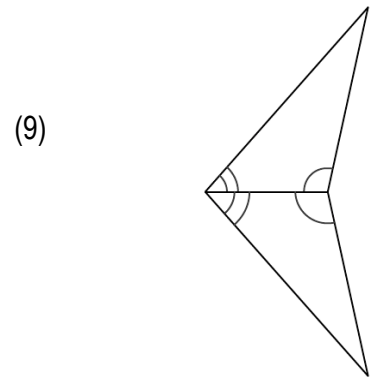












(7)
cont.

Homework**Congruence: A sequence of transformations (ASA #1 remix)**

(10) Construct right triangle MOP with right angle O.

(11) Bisect angle O in the triangle you constructed for problem number 10. How many degrees is each half of the bisected angle?

(12) Construct equilateral triangle WET.

(13) Bisect angle T in the triangle you constructed for problem number 12. How many degrees is each half of the bisected angle?

 (7) **Homework**

cont. (14) Use the work that you did in problems 10 through 13 to construct an angle that measures 75° .

Exit Ticket **Name** _____ **Date** _____ **Per** _____

4.5R

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

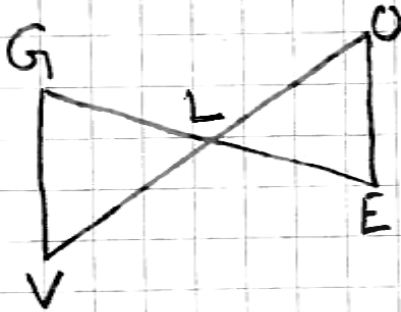
No exit ticket. Proof Progress only

(1) PROOF PROGRESS B:

Write a proof for #1 or #2.

Attach this to the top of your "Proof Progress" packet with a paper clip.

① Given: \overline{GL} bisects \overline{OV}
 $\overline{GV} \parallel \overline{OE}$
 $\overline{GV} \cong \overline{OE}$
 Prove: $\triangle GLV \cong \triangle ELO$



② Given: \overline{IT} bisects $\angle MTS$
 $\overline{MT} \cong \overline{ST}$
 Prove: $\triangle MIT \cong \triangle SIT$

