

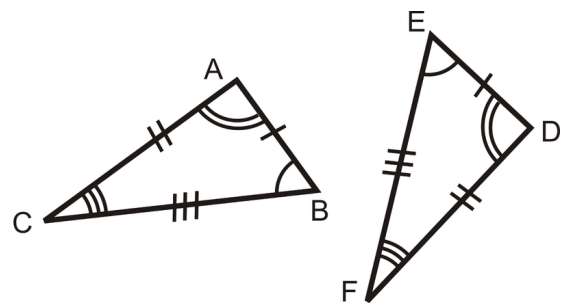
Unit 4 Lesson 5 – Congruent Triangles, SSS, SAS, ASA, and AAS

- Congruent figures are figures with the same _____ and _____
 - When 2 figures are congruent, you can move 1 so that it fits exactly on the other
 - _____, _____, and _____ are all translations that result in congruent figures
 - Can you think of a transformation from Unit 1 that would not result in a congruent figure?

- Congruent polygons have congruent _____ parts (matching sides and angles)
 - When triangles are congruent, in proofs, we write _____ which stands for corresponding parts of congruent triangles are congruent

- When naming congruent polygons, always list corresponding vertices in the same order
 - Write a congruence statement for the two triangles shown here:

_____ \cong _____

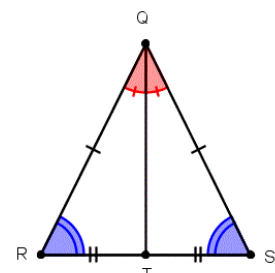


- Given: $\triangle WYS \cong \triangle MKV$. List the corresponding congruent parts without a picture.

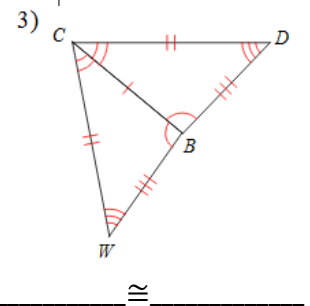
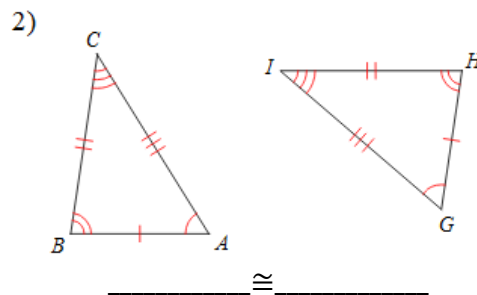
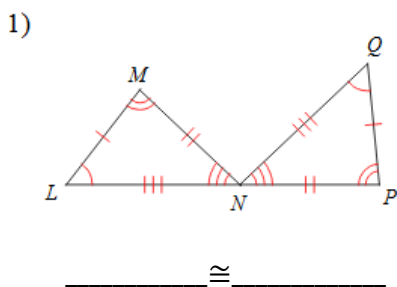
- $\angle W \cong$ _____
- $\angle Y \cong$ _____
- $\angle S \cong$ _____
- $\overline{WY} \cong$ _____
- $\overline{YS} \cong$ _____
- $\overline{SW} \cong$ _____

- Write a congruence statement for the two triangles shown here:

_____ \cong _____



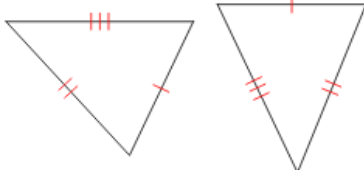
Write a statement of congruence for each triangle below:

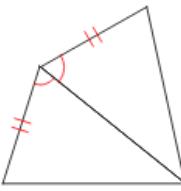


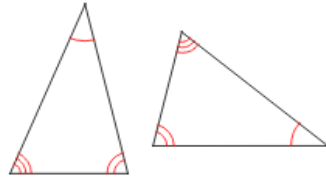
Proving Congruence in Triangle

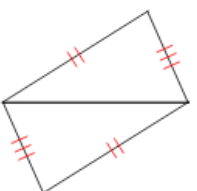
- Before we proved two triangles were congruent by showing that all six pairs of corresponding parts were congruent. It is possible to prove two triangles congruent using fewer parts.
- _____ (SSS) Congruence – If three sides of one triangle are congruent to three sides of a second triangle, then the triangles are congruent.
- _____ (SAS) Congruence – If two sides and the included angle of one triangle are congruent to two sides and the included angle of a second triangle, then the triangles are congruent.
- _____ (ASA) Congruence – 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.
- _____ (AAS) Congruence – If two angles and the non-included side of one triangle are congruent to the corresponding two angles and side of a second triangle, then the two triangles are congruent.

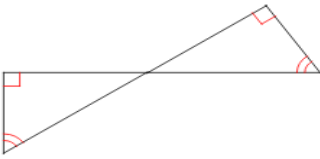
State if the two triangles are congruent. If they are, state how you know. (SSS, SAS, ASA, and AAS).

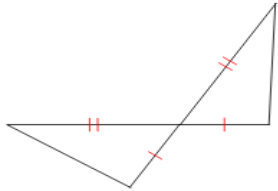
1)  _____

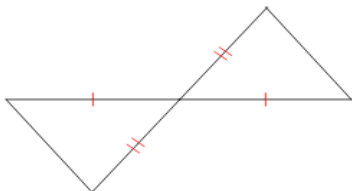
2)  _____

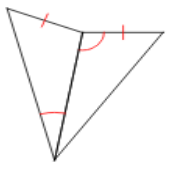
3)  _____

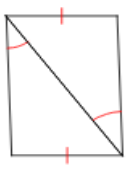
4)  _____

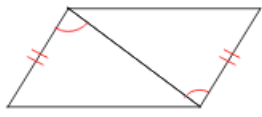
5)  _____

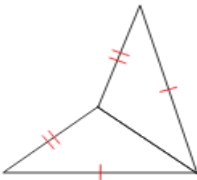
6)  _____

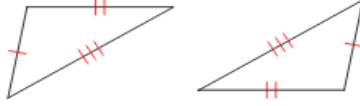
7)  _____

8)  _____

9)  _____

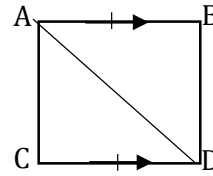
10)  _____

11)  _____

12)  _____

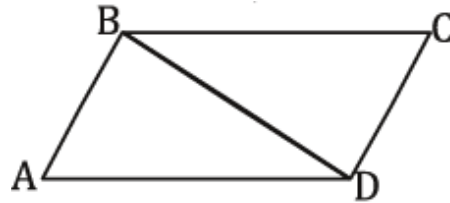
Proving Triangles Congruent

- Reflexive Property of Triangle Congruence $\rightarrow \triangle ABC \cong \triangle ABC$
- Symmetric Property of Triangle Congruence \rightarrow If $\triangle ABC \cong \triangle EFG$, then $\triangle EFG \cong \triangle ABC$



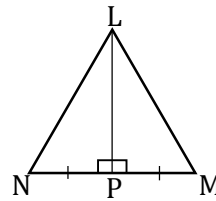
Given the figure below, prove that $\triangle ACD \cong \triangle CAB$.

Statement	Reason
1. $AB = CD, \overline{AB} \parallel \overline{CD}$	
2. $\angle BAC \cong \angle DCA$	
3. $AC = AC$	
4. $\triangle ACD \cong \triangle CAB$	



Given $\overline{AB} \cong \overline{CD}, \overline{AD} \cong \overline{CB}$, prove $\triangle ABD \cong \triangle CBD$.

Statement	Reason
1. $\overline{AB} \cong \overline{CD}$	
2. $\overline{AD} \cong \overline{CB}$	
3. $\overline{BD} \cong \overline{BD}$	
4. $\triangle ABD \cong \triangle CBD$	



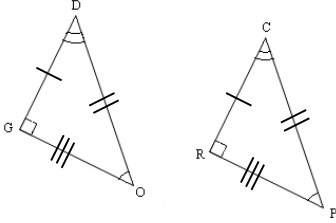
Given the figure below, prove that $\triangle NPL \cong \triangle MPL$.

Statement	Reason
1. $NP = PM, \overline{NP} \perp \overline{PL}$	
2. $\angle MPL$ is a right angle $\angle NPL$ is a right angle	
3. $PL = PL$	
4. $\triangle NPL \cong \triangle MPL$	

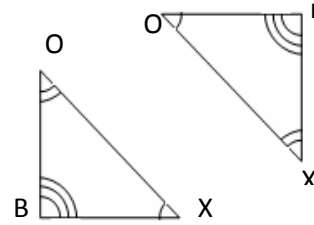
Unit 4 Lesson 5-Classwork/Homework

I. Name the congruent triangles.

1. $\triangle OGD \cong \triangle$ _____

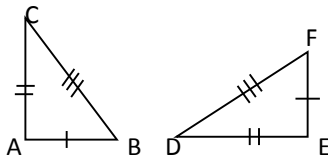


2. $\triangle BOX \cong \triangle$ _____

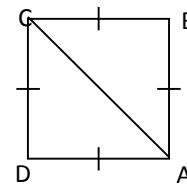


II. For each pair of triangles, tell whether the triangles are congruent by a postulate. If they are write a similarity statement.

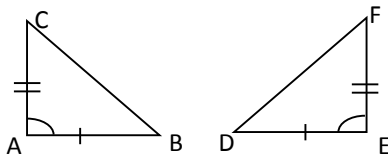
3. $\triangle ABC \cong \triangle$ _____



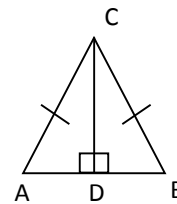
4. $\triangle ABC \cong \triangle$ _____



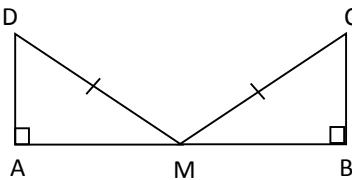
5. $\triangle ABC \cong \triangle$ _____



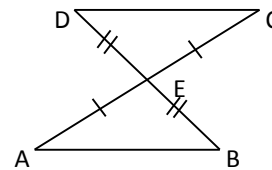
6. $\triangle ADC \cong \triangle$ _____



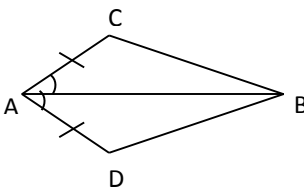
7. $\triangle MAD \cong \triangle$ _____



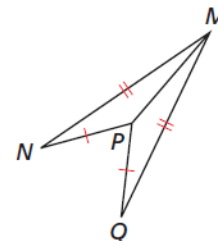
8. $\triangle ABE \cong \triangle$ _____



9. $\triangle ACB \cong \triangle$ _____

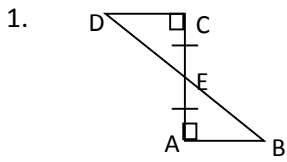


10. $\triangle MNP \cong \triangle$ _____



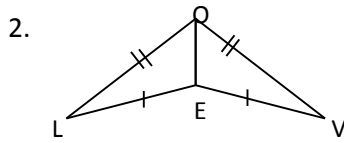
Practice Proofs

For each pair of triangles, tell: (a) Are they congruent (b) Write the triangle congruency statement. (c) Give the postulate that makes them congruent. Then write a prove in the bale provided.



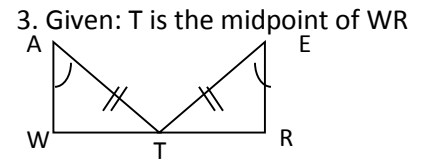
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



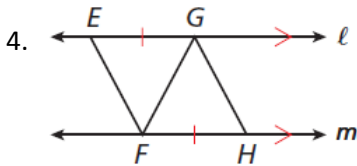
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



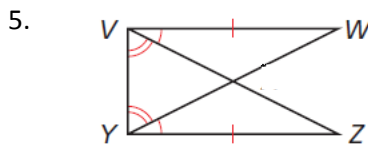
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



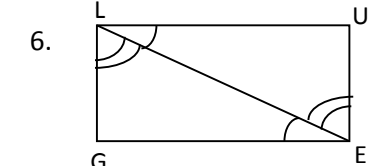
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



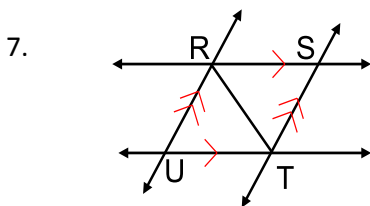
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



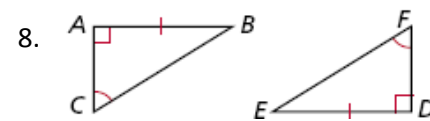
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



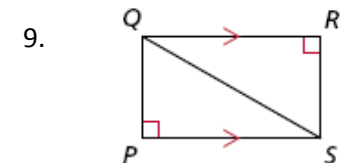
- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason



- a. _____
 b. Δ _____ \cong Δ _____
 c. _____

Statement	Reason