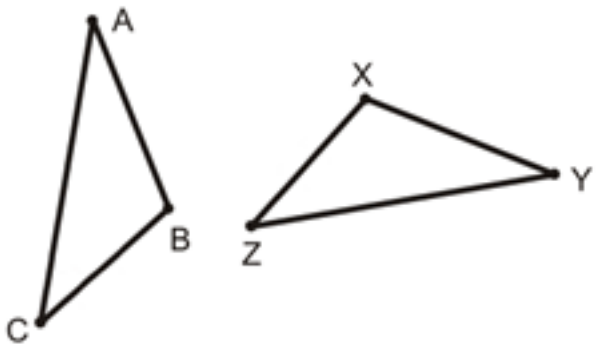
CH.6, L1 – INTRODUCTION TO CONGRUENT TRIANGLES

Objective: Given two congruent triangles, I will identify corresponding congruent parts by analyzing a diagram and/or congruence statement. I will also distinguish between proper and improper names for a given angle.

Think About It: In the diagram below, $\Delta BCA \cong \Delta XZY$



1. Which side is congruent to $\overline{ZY}$? Explain how you know.

   $\overline{ZY} \cong$ _____ because _____

   _____

2. Which angle is congruent to $\angle A$? Explain how you know.

   $\angle A \cong$ _____ because _____

   _____

3. Name the identified angle from question #2 in another way. Explain how the naming conventions describe the angle.

   ∠____ can also be name ∠_____ or ∠_____ since _____

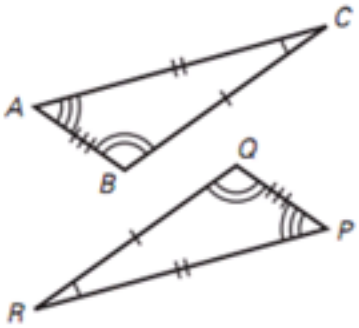
   _____

Big Idea:

1. Congruence statements are rewritten and annotated to determine proper angle or side
2. Sides and angles are named appropriately given the situation
3. Answers are justified
4. False statements are rewritten to be true

Interaction with New Material:

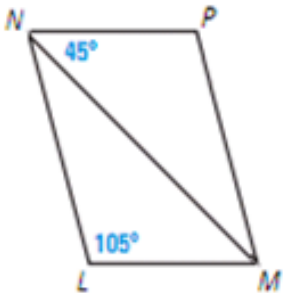
Ex. 1) Identify all pairs of corresponding congruent parts for the triangles shown. Then write a congruence statement for the two triangles.



Congruent angles	Congruent sides
$\angle C \cong$ _____	$\overline{CB} \cong$ _____
$\angle B \cong$ _____	$\overline{AC} \cong$ _____
$\angle A \cong$ _____	$\overline{AB} \cong$ _____

Congruence statement: Δ_____ ≅ Δ_____

Ex. 2) In the diagram below, $\Delta LMN \cong \Delta PNM$. Use the diagram to answer the following questions:



a. What is $m\angle P$?

$m\angle P =$ _____° because _____

b. Determine if the following statement is true or false. If it is false, revise the statement to be true.

$m\angle N = 45°$

c. What other angle measures $45°$?

$m\angle$_____ $= 45°$ or $m\angle$_____ $= 45°$ because _____

d. What side is congruent to $\overline{NM}$? How do you know?

$\overline{NM} \cong$ _____ because _____

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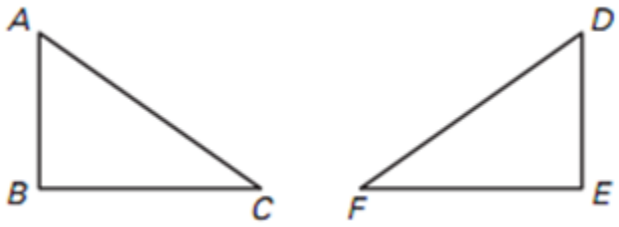
Partner Practice:

1. In the diagram below, ΔABC ≅ ΔDEF. Name three pairs of congruent sides and three pairs of congruent angles.

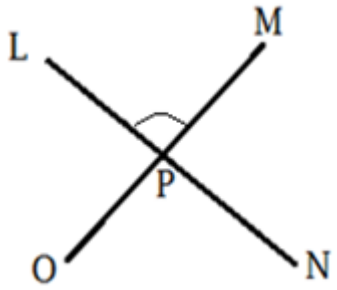


Congruent Sides	Congruent Angles

2. Write two more congruence statements that are different from the one given in question 1 but are equivalent in showing the triangles are congruent.

Congruence statements: Δ_____ ≅ Δ_____ and Δ_____ ≅ Δ_____

3. Use the marked angle, below. Determine whether each name can be used to name the angle. Explain your answers.



a. $\angle LPM$

_____ because _____

_____

b. $\angle P$

_____ because _____

_____

c. $\angle PLM$

_____ because _____

_____

d. $\angle MPL$

_____ because _____

_____

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4. Given $\Delta ABC \cong \Delta XYZ$, which of the following must be true? Explain.

   a. $\angle C \cong \angle Y$
   b. $\angle A \cong \angle X$
   c. $\overline{AC} \cong \overline{YZ}$
   d. $\overline{CB} \cong \overline{XZ}$

_____ ≅ _____ because _____

5. In the diagram below, $\Delta TJM \cong \Delta PHS$. Complete each statement.

   a. $\angle P \cong$ _____

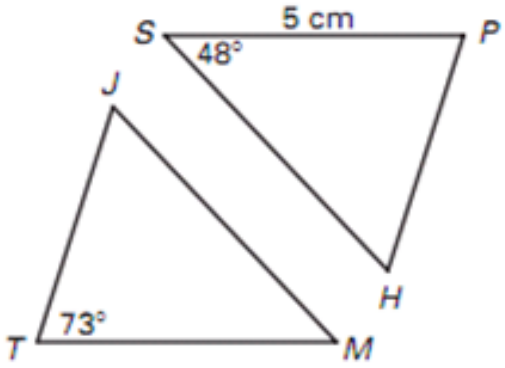
   b. $\overline{JM} \cong$ _____

   c. $m\angle M = m\angle$ _____ = _____°

   d. $m\angle P = m\angle$ _____ = _____°

   e. $\overline{MT}$ = _____

   f. $\Delta HPS \cong$ _____



6. Given $\Delta ABD \cong \Delta ZVH$. Determine whether each statement is *true* or *false*. If it is false, explain why and rewrite the statement to be true.

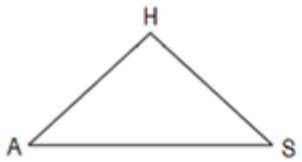
   a. $\angle V \cong \angle H$ is _____ because _____
   b. $\Delta BAD \cong \Delta VHZ$ is _____ because _____
   c. $\overline{DB} \cong \overline{HV}$ is _____ because _____

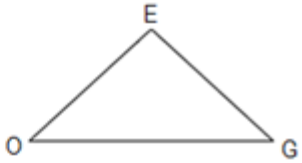
7. In the diagram at right, $\Delta AHS \cong \Delta GEO$. Alvin looks at the two triangles and makes the following statement:

   "Because angles S and G are in the same location, $\angle S \cong \angle G$."

   Explain why Alvin's statement is incorrect. What could be changed about this problem so that Alvin's statement would be true

   _____
   _____
   _____





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