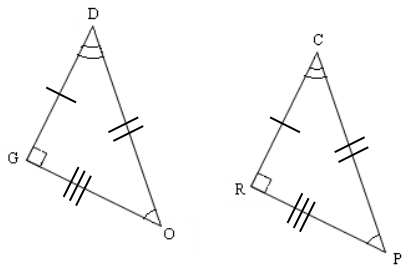
11A Triangles and Symbols

Name: _____ Per: _____

SHOW YOUR WORK AND WORK IN PENCIL

1. **Write a congruency statement for the two triangles. Then list the congruent sides and angles.**

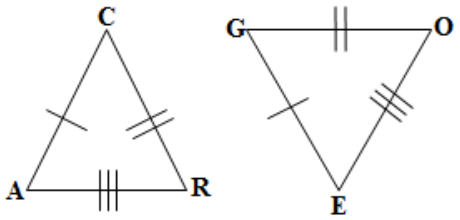
a. $\Delta OGD \cong \Delta$ _____



$\angle D \cong \angle$_____ $\angle G \cong \angle$_____ $\angle O \cong \angle$_____

$GO \cong$ _____ $DO \cong$ _____ $GD \cong$ _____

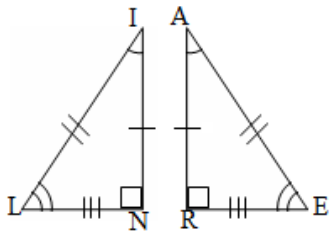
b. $\Delta RAC \cong \Delta$ _____



$\angle C \cong \angle$_____ $\angle A \cong \angle$_____ $\angle R \cong \angle$_____

$AR \cong$ _____ $RC \cong$ _____ $AC \cong$ _____

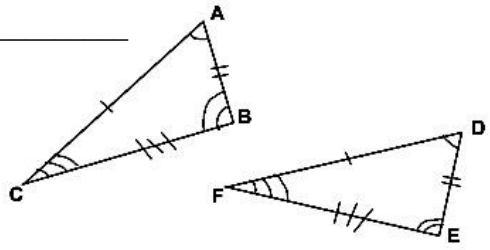
c. $\Delta LIN \cong \Delta$ _____



$\angle R \cong \angle$_____ $\angle E \cong \angle$_____ $\angle A \cong \angle$_____

$RE \cong$ _____ $AR \cong$ _____ $AE \cong$ _____

d. $\Delta ABC \cong \Delta$_____



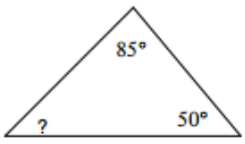
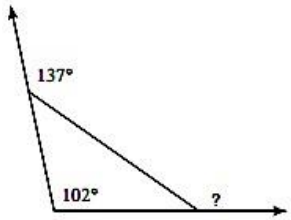
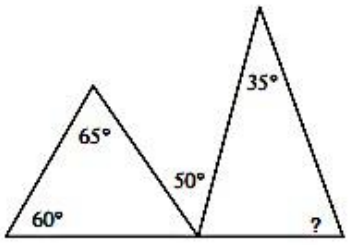
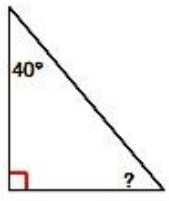
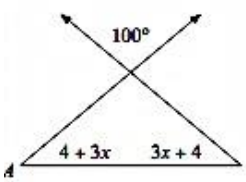
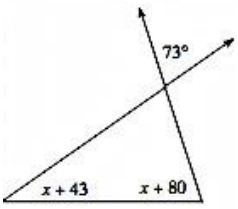
$\angle B \cong \angle$_____ $\angle A \cong \angle$_____ $\angle C \cong \angle$_____

$BC \cong$ _____ $AB \cong$ _____ $AC \cong$ _____

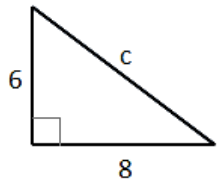
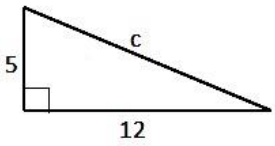
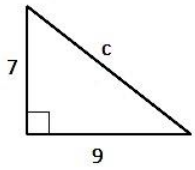
2. State if the three numbers can be the measures of the sides of a triangle. **Explain** why or why not.

a. $7, 5, 4$ b. $5, 2, 3$ c. $9, 2, 5$ d. $4, 7, 5$

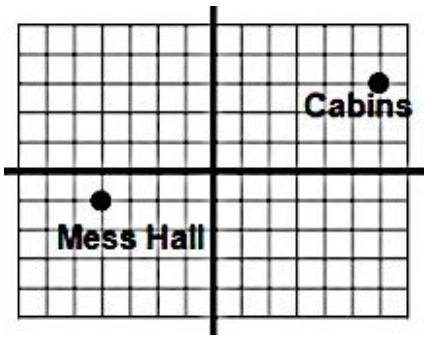
3. Label and **measure ALL of the missing angle(s)** from the following triangles.

a. 	b. 	c. 
d. 	e. 	f. 

4. Use the **Pythagorean Theorem** to find the length of the missing sides of the following right triangles. Leave answers as exact and simplify if needed.

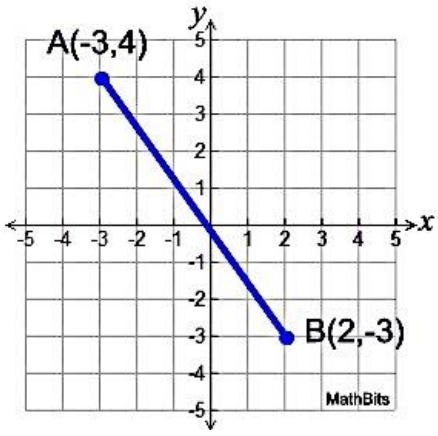
a. 	b. 	c. 
d. $a = 5$ *and* $b = 4$	e. $a = 8$ *and* $c = 17$	f. $b = 12$ *and* $c = 37$

5. Troop 263 is designing their new campground by first mapping everything on a coordinate grid. They have found a location for the mess hall and for their cabins. They decide to make one unit on the graph correspond to 3 yards. How many yards apart are the mess hall and the cabins?
    a. They would like to put a drinking fountain in the MIDDLE of the mess hall and cabins. At what point should they put it?



Extra Credit: They want the bathrooms at a RIGHT angle between the Mess Hall and Cabins. Where could they put them?

6. Use the following image to the right with line segment AB.



    a. Find the midpoint of line segment AB._____
    b. The slope of AB is?_____
    c. What is the slope of the line perpendicular to AB? _____
    d. Find the equation for the perpendicular bisector of the line
    e. Then **CONSTRUCT** it.
    f. Find the distance of the given line segment.

Solve for a.

7. $2(a + 3b) = 15 - 2b$

8. $\frac{3}{5}(a + 15) = 3$