Name_____ Date_____

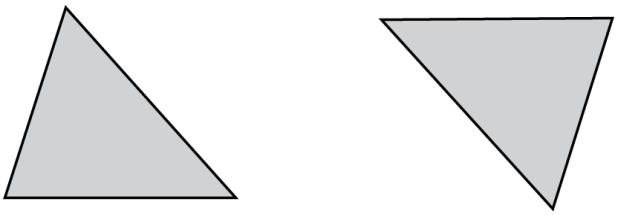
2.1 & 2.5 – Congruent & Similar Figures

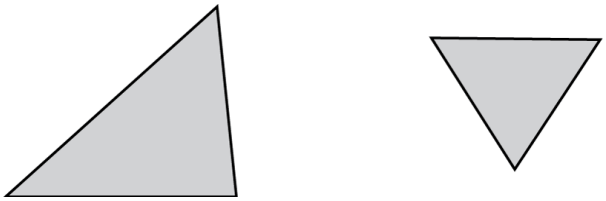
1) Two figures are congruent when they have the _____ _____ and the _____ _____.

2) In two shapes, another name for ***matching sides*** is _____ _____.

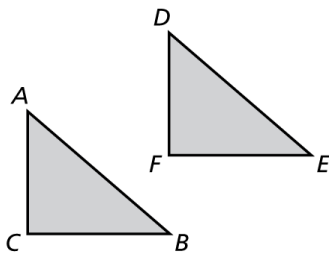
3) In two shapes, another name for ***matching angles*** is _____ _____.

Tell whether the triangles are *congruent* or *not congruent*.

4) 

5) 

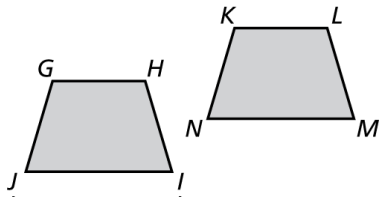
The figures are congruent. Name the corresponding angles and the corresponding sides.

6) 

$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

7) 

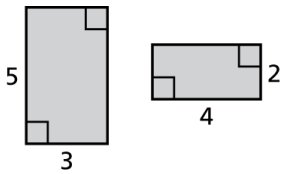
$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

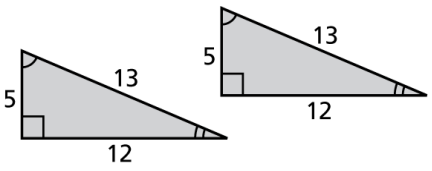
$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

$\angle$___ $\cong$ $\angle$___ _____ $\cong$ _____

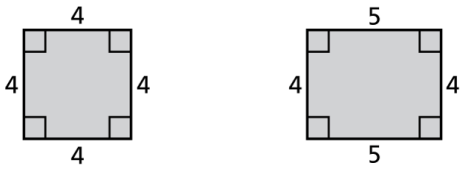
Tell whether the two figures are congruent. Explain your reasoning.

8) 

9) 

Describe and correct the error in telling whether the two figures are congruent.

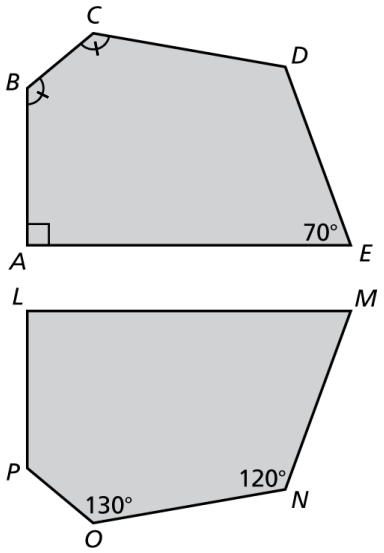
10)



X Both figures have four sides and corresponding angle measures are equal. So, they are congruent.

11) The pentagons are congruent. Determine whether the statement is *true* or *false*. Explain your reasoning.

a) $\angle B$ is congruent to $\angle C$.



b) Side *MN* is congruent to side *AE*.

c) $\angle B$ corresponds to $\angle O$.

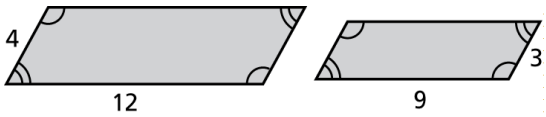
d) Side *BC* is congruent to side *PO*.

e) The sum of the angle measures of *LMNOP* is 540°.

f) The measure of $\angle B$ is 120°.

Complete each statement. Explain briefly why it is true.

12) Tell whether the two figures are similar. Explain your reasoning.



13) The rectangular traffic sign is 18 inches wide and 8 inches tall. The rectangular realtor sign is 27 inches wide and 10 inches tall. Are the signs similar? Explain.

14) The given rectangle needs to be modified.

a) From the original, each side is increased by 2. Is the new rectangle similar to the original? Explain.

b) From the original, each side is cut in half. Is the new rectangle similar to the original? Explain.

15) Which of the following card dimensions are similar rectangles?

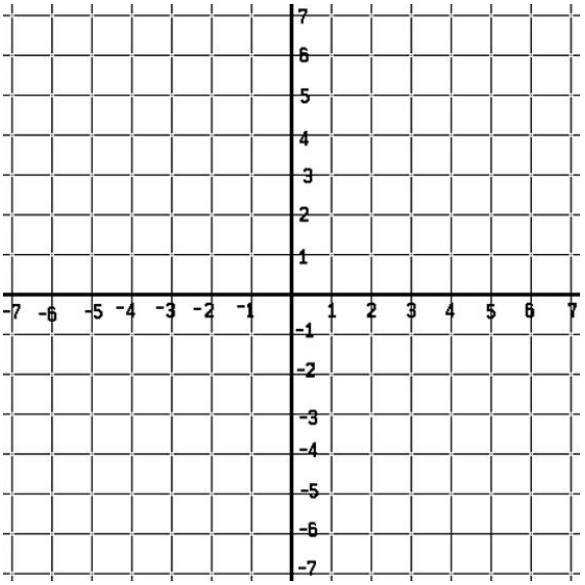
a) 2 in. by 5 in.
b) 3 in. by 6 in.
c) 1 in. by 3 in.
d) 1 in. by 2.5 in.

16) In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

Rectangle A: $(0, 0), (3, 0), (3, 2), (0, 2)$

Rectangle B:
$(0, 0), (1, 0), (1, 3), (0, 3)$

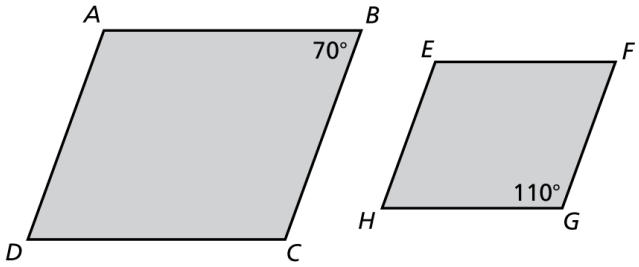
Rectangle C: $(0, 0), (2, 0), (2, -3), (0, -3)$



The two parallelograms are similar. Find the degree measure of each angle:

17) $m\angle A =$ _____ 18) $m\angle H =$ _____

19) $m\angle D =$ _____ 20) $m\angle F =$ _____



21) Is it possible for the following figures to be similar? Explain.

a) A stop sign and a speed limit sign

b) A cell phone and an exam paper

c) A yield sign and a home plate

d) A laptop and a swimming pool

22) You have a triangle that has side lengths of 6, 9, and 12.

a) Give the side lengths of a similar triangle that is smaller than the given triangle.

b) Give the side lengths of a similar triangle that is large than the given triangle.