Section 6.4 – Similar Polygons

If the ratios of corresponding sides of two polygons are all equal and their corresponding angles

are congruent then the two polygons are called _____ polygons.

The word _____ is used to indicate that the ratios of the corresponding sides are equal.

Example of Similar Polygons

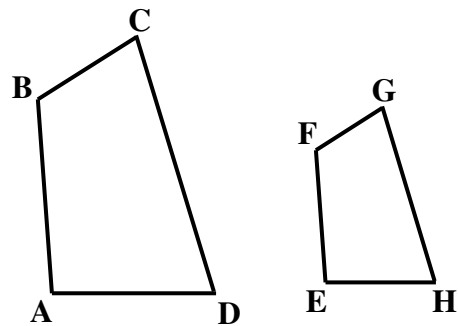In the diagram, ABCD is similar to EFGH. The symbol _____ is used to indicate similarity.

Important: There are ___ criteria that must be fulfilled in order for two polygons to be similar.

  Criteria 1: Ratios of Corresponding Sides are Equal (Statement of Proportionality)

$$\overline{} = \overline{} = \overline{} = \overline{}$$

  Criteria 2: Corresponding Angles are Congruent

_____, _____,
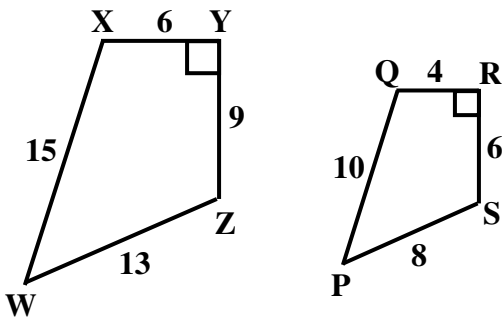
_____, _____

Important: Just like writing a congruence statement, the order of letters is important
            when writing a similarity statement.

Using symbolic notation, one possible similarity statement
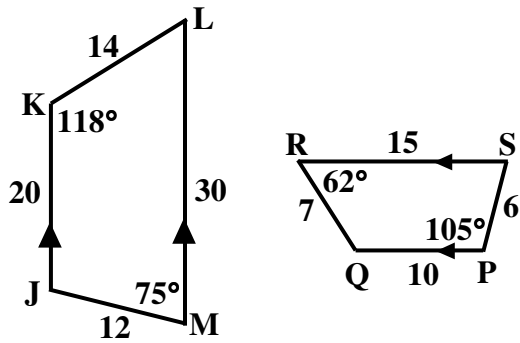
for the above example could be _____.

Ex 1:
Decide whether the figures are similar. If they are similar, write a similarity statement.

Tip: Start off setting up ratios using the smallest side lengths and then continue using the larger.
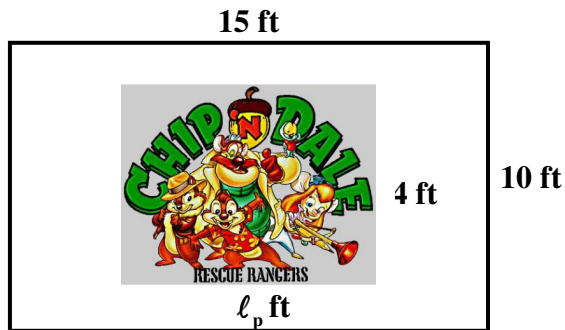
Ex 2:
Decide whether the figures are similar. If they are similar, write a similarity statement.

If two polygons are similar, then the ratio of the lengths of two corresponding sides is

called the _____. It is a number that shows how much bigger or

smaller similar figures are to each other.

Ex 3:
A painting is similar to the wall on which it is hanging.
Determine the scale factor and set up a proportion using the scale factor
to find the length of the painting in feet.

Ex 4:
The two polygons are similar. Find the values of x and y.