Geometry- Mrs. Tilus   Name: _____
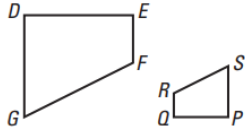Unit 6- Worksheet #3: Similar Polygons

1. Two polygons are similar if corresponding angles are _____ and corresponding side

   lengths are_____

2. In the figure below, $DEFG \sim PQRS$. List all the pairs of congruent angles and write the ratios of the
corresponding sides in a statement of proportionality.

3. Triangles ABC and DEF are similar. Which statement is not correct?

   Ⓐ $\dfrac{BC}{EF} = \dfrac{AC}{DF}$ Ⓑ $\dfrac{AB}{DE} = \dfrac{CA}{FD}$ Ⓒ $\dfrac{CA}{FD} = \dfrac{BC}{EF}$ Ⓓ $\dfrac{AB}{EF} = \dfrac{BC}{DE}$

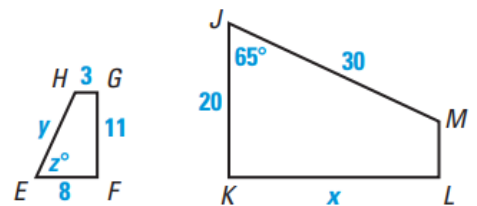Determine whether the polygons are similar. If they are, write a similarity statement and find the scale factor.

4.   5.
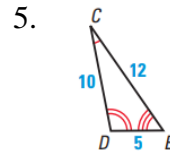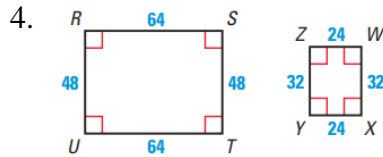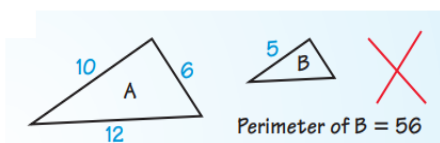

In the diagram, $JKLM \sim EFGH$.

   6. Find the scale factor of **_JKLM to EFGH_**.

   7. Find the values of $x, y,$ and z.

   8. Find the perimeter of each polygon.
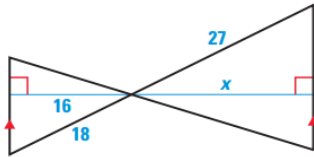
9. The triangles are similar. Describe and correct the error in finding the perimeter of Triangle B.
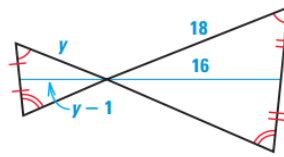

Perimeter of B = 56

10. Two similar FOR SALE signs have a scale factor of 5:3. The large sign's perimeter is 60 inches. Find the small sign's perimeter.

Identify the type of special segment shown in the sets of triangles. Find the value of x.
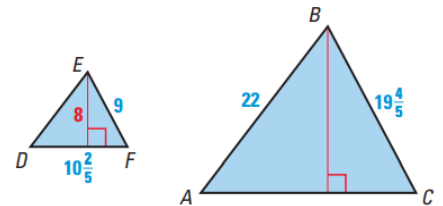
11.

12.

Triangles NPQ and RST are similar. The side lengths of $\triangle NPQ$ are 6 inches, 8 inches and 10 inches. The length of an altitude is 4.8 inches. The shortest side of $\triangle RST$ is 8 inches long.

13. Find the lengths of the other two sides of $\triangle RST$

14. Find the length of the corresponding altitude in $\triangle RST$.

In the diagram, $\triangle ABC \sim \triangle DEF$

15. Find the scale factor of $\triangle ABC$ to $\triangle DEF$

16. Find the unknown side lengths in both triangles.

17. Find the length of the altitude show in $\triangle ABC$.