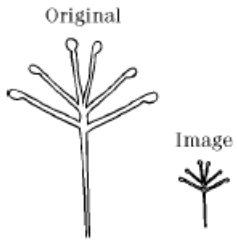
Name:_____ Date:_____

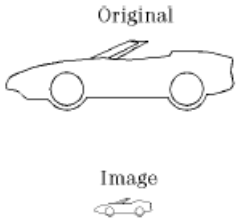
Math 9: HW Section 7.2 Scaled Factors

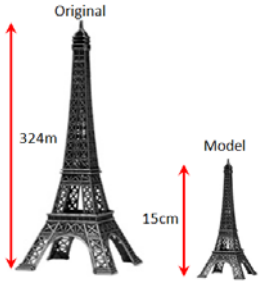
1. Given each of the following equations, find the value of "x":

a) $\frac{3}{5}=\frac{x}{10}$	b) $\frac{2}{8}=\frac{x}{12}$	c) $\frac{7}{20}=\frac{x}{60}$	d) $\frac{12}{14}=\frac{x}{21}$
e) $\frac{4}{11}=\frac{2x}{33}$	f) $\frac{4}{15}=\frac{10}{x}$	g) $\frac{12}{x}=\frac{6}{10}$	h) $\frac{3}{5}=\frac{3x}{4}$

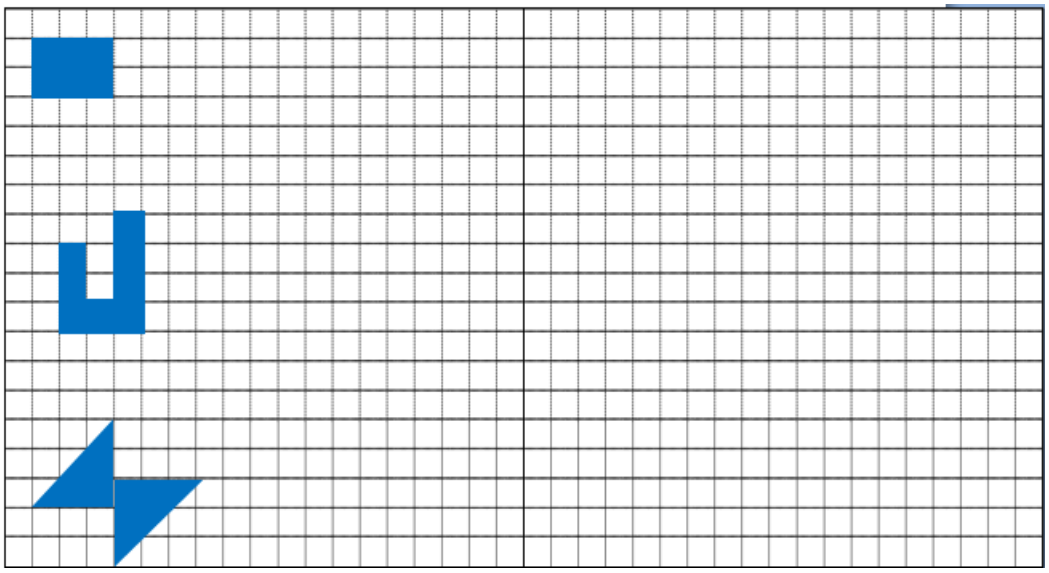
2. Given the following two shapes, use a ruler to determine the scale factor:







3. Given each of the following images on the left, draw a scaled diagram with a scaled factor of 2.5:

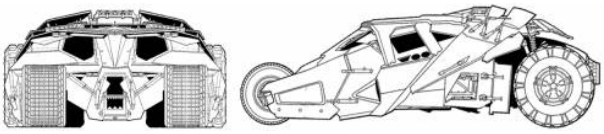


4. The average length of a BMW 325xi is about 4.85meters long. A toy model of this car is reduced at a scaled factor of 0.25. What is the length of the toy model?

5. The distance between Vancouver and Seattle is 226.5km. The distance between the two cities on a map is about 2.3cm apart. What is the scaled factor of the map?

6. The scaled factor of a map 1/200,000,000. If the distance between the two cities on a map is 5.5cm, how far are they apart in the real world?

7. The Tumbler from Batman Returns has a length of 4.6 meters long. A toy model of this vehicle is 25cm long. What is the scaled factor?



8. The length of an E. coli bacteria is about 0.005mm long. A toy E. coli bacteria has a length of 35cm long. What is the scaled factor of the toy?

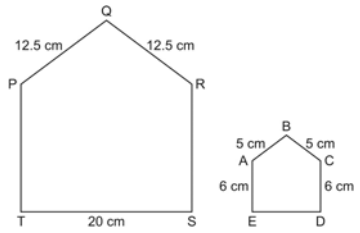
9. An architect builds a model of a building at a scaled factor of 0.0003. If the model has a length of 85cm long and 75cm wide, what is the length and width of the actual building in meters? What is the area of the building?

10. A little photograph measuring 10cm by 15cm is enlarged by a scaled factor of 10.5. What is the area of the enlarged picture in cm^2 ?

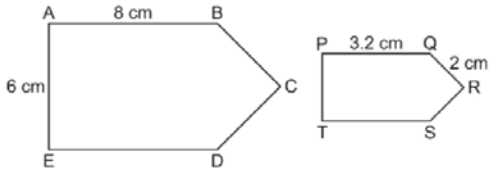
Name:_____ Date:_____

Math 9 HW Section 7.3 Similar Polygons

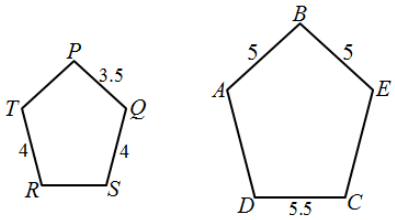
1. Given that the following polygons are similar, find the lengths of PT and DE.



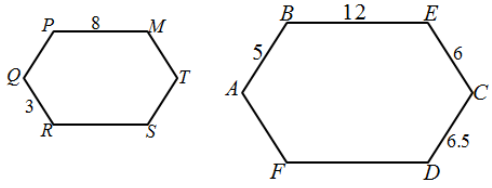
b) Find the lengths of BC and PT:



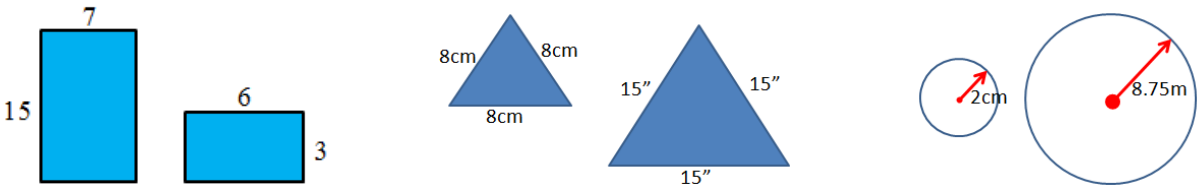
c) Find the lengths of RS and EC:



d) Find the lengths of PQ, AF, and MT:



2. Given the following set of shapes, indicate whether if they are similar or not:



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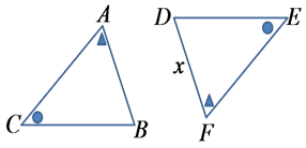
Math 9 HW Section 7.4 Similar Triangles:

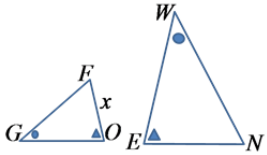
1. Given that each pair of similar triangles, indicate which side in the second triangle corresponds with side "x"?

a) $\Delta ABC \sim \Delta FDE$



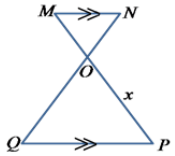
$x =$

b) $\Delta FOG \sim \Delta NEW$



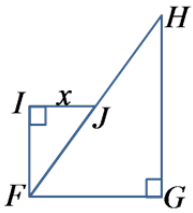
$x =$

c) $\Delta MON \sim \Delta POQ$



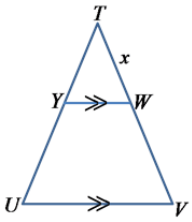
$x =$

d) $\Delta FIJ \sim \Delta HGF$



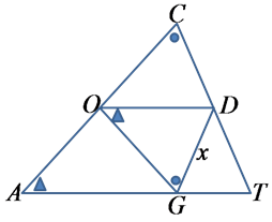
$x =$

e) $\Delta TYW \sim \Delta TUV$



$x =$

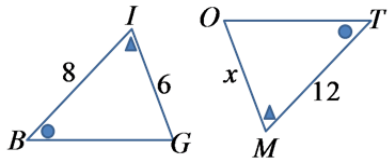
f) Challenge: $\Delta TAC \sim \Delta DOG$



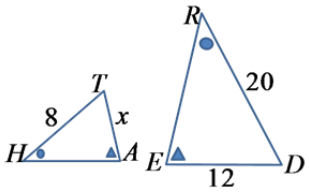
$x =$

2. Given that following pairs of similar triangles, find the length of the missing side "x".

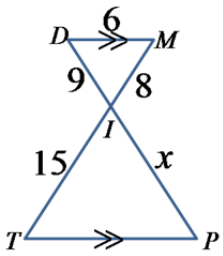
a)



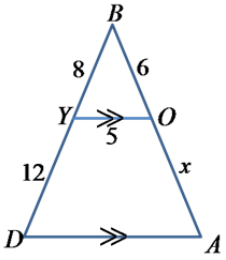
b)



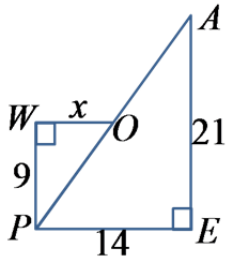
c)



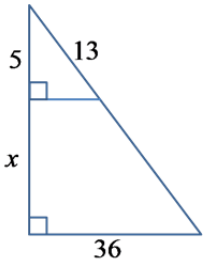
d)



e)



f)

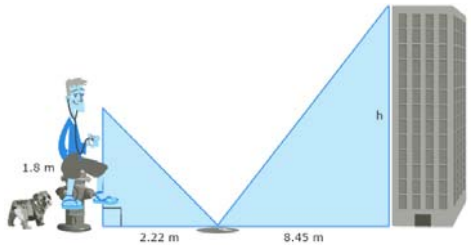


3. Indicate whether if the following statements are true OR false: Explain why.

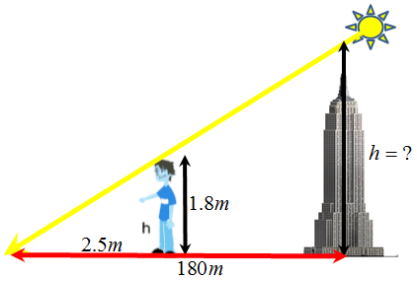
i) If two triangles are similar they have the same shape	TRUE	FALSE
ii) If two triangles are similar, they have the same size	TRUE	FALSE
iii) All equilateral triangles are similar	TRUE	FALSE
iv) All isosceles triangles are similar	TRUE	FALSE
v) All isosceles right triangles are similar	TRUE	FALSE
vi) All right triangles are similar	TRUE	FALSE
vii) All squares are similar	TRUE	FALSE

4. Naomi wants to calculate the height of a tree. She is 1.2 m tall and casts a shadow of 2.75 m. At the same time, the shadow of the tree is 10.5 m long. How tall is the tree?

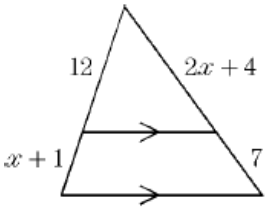
5. Given the following diagram with the two similar triangles, what is the height of the building?

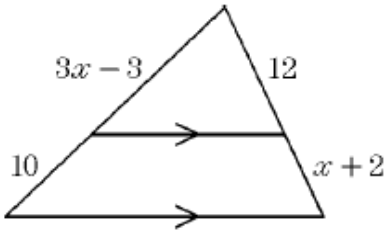


6. Jason is 1.8m tall and the sun casts a shadow of 2.5m. A building nearby has a shadow 180meters long. Using similar triangles, how high is the building?



7. Solve for the value of "x"

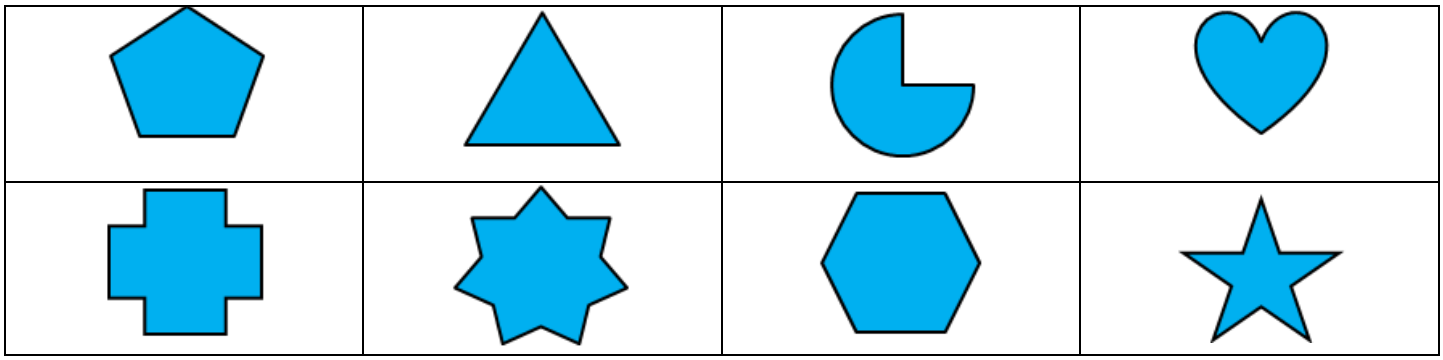




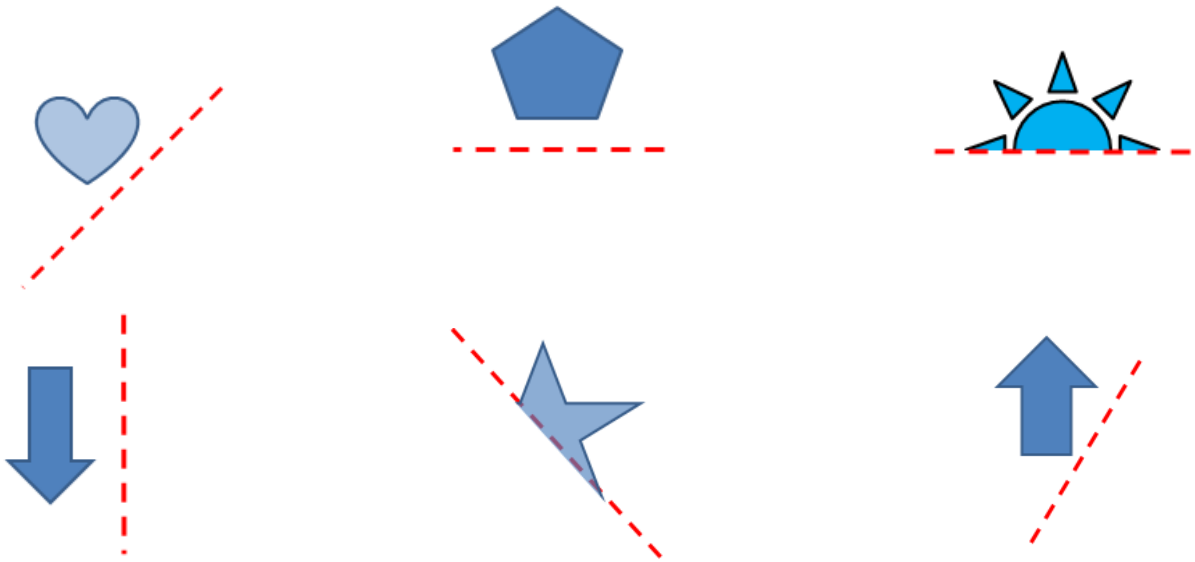
Name:_____ Date:_____

HW Section 7.5 Reflections and Line Symmetry:

1. Given each of the following shapes, draw all the lines of symmetry:

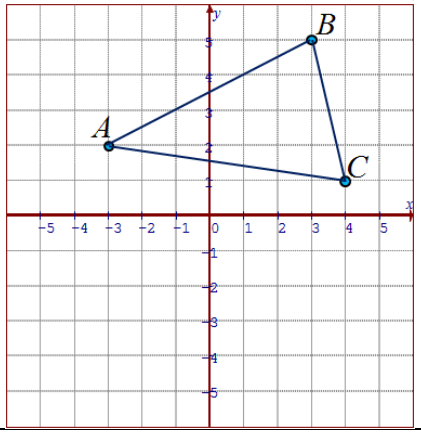


2. Given each object with the line of symmetry, draw the reflection using a mirror:

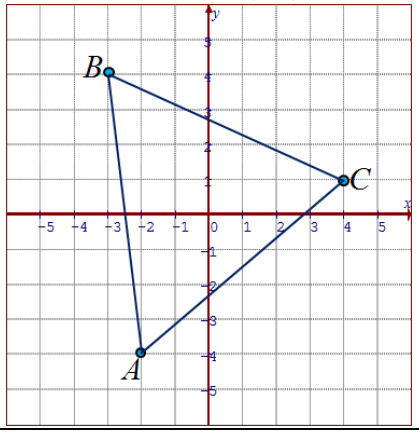


3. Given the following shape, draw the shape after each reflection. Find the coordinates of the vertices:

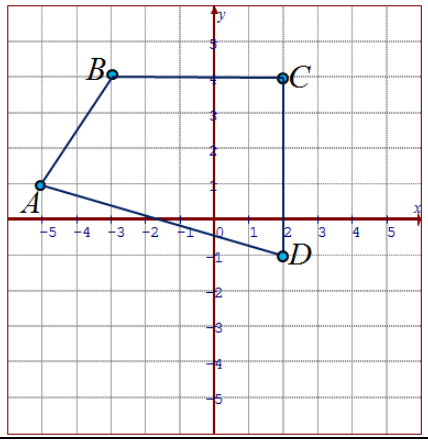
a) Reflect the following shape over the X-axis and then find the coordinates of *A'*, *B'*, and *C'*



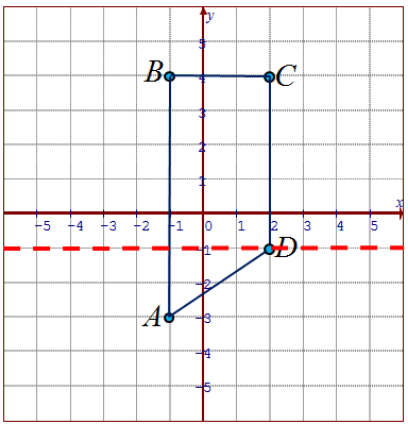
b) Reflect the following over the Y-axis and then find the coordinates of *A'*, *B'*, and *C'*



c) Reflect the following over the line y=x and then find the coordinates of *A', B', C', and D'*



d) Reflect the following over the horizontal dashed line and then find the coordinates of *A', B', C', and D'*



4. If a point is reflected over the Y-axis, which coordinate stays the same and which one changes?

5. If a point is reflected over the X-axis, which coordinate stays the same and which one changes?

6. What happens the coordinates of a point if it is reflected over the line *y=x*?

7. What is the coordinate of A(3,5) after it is reflected over the Y-axis

8. If the point B was reflected over the vertical line x=3, the coordinates of the new point would be (3,4). What was the original coordinate of point "B"?

9. Which of the following shapes will have the most lines of symmetry? Rhombus, Trapezoid, Oval, or Octagon.

10. Which letters in the alphabet have only one line symmetry? Which letters have more than one?

11. If the coordinates of point P is *(a,b)*, then what is the coordinate of P' if it is reflected over the line *y=x*.