

Similar Polygons

Name _____ Period _____

Decide if the following ratios form a proportion.

1. $\frac{5}{3}, \frac{35}{21}$

2. $\frac{8}{56}, \frac{6}{28}$

3. $\frac{18}{4}, \frac{27}{9}$

4. $\frac{15}{21}, \frac{55}{77}$

Solve for x.

5. $\frac{9}{24} = \frac{x}{64}$

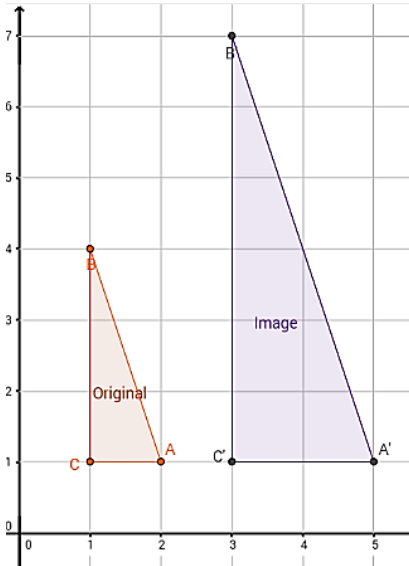
6. $\frac{x}{8} = \frac{39}{12}$

7. $\frac{36}{x} = \frac{27}{9}$

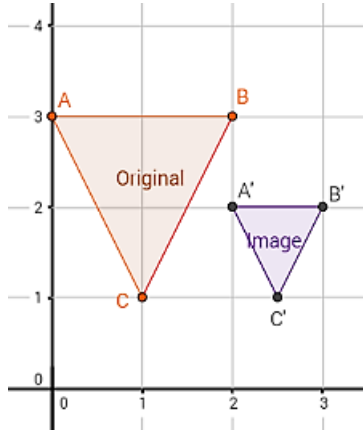
8. $\frac{x}{15} = \frac{10}{60}$

Are the sides of the triangles proportional? Round your answers to 2 decimal places. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

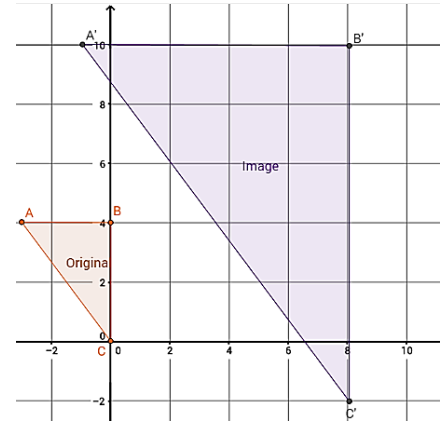
9.



10.



11.



Find the perimeters of the triangles in exercises 9 – 11.

12. Perimeter of $\triangle ABC =$

13. Perimeter of $\triangle ABC =$

14. Perimeter of $\triangle ABC =$

Perimeter of $\triangle A'B'C' =$

Perimeter of $\triangle A'B'C' =$

Perimeter of $\triangle A'B'C' =$

Find the areas of the triangles in exercises 9 – 11. $A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$

15. Area of $\triangle ABC =$

16. Area of $\triangle ABC =$

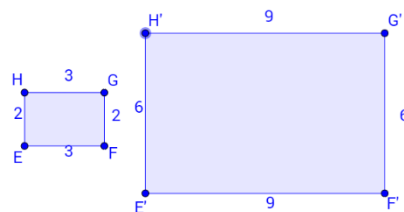
17. Area of $\triangle ABC =$

Area of $\triangle A'B'C' =$

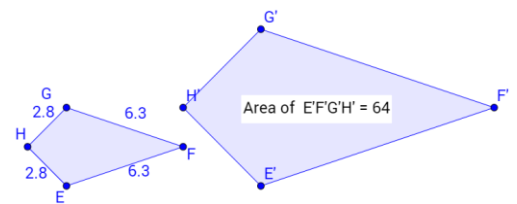
Area of $\triangle A'B'C' =$

Area of $\triangle A'B'C' =$

18. Find the perimeters and areas of the rectangles.



19. If the area of EFGH = 16, predict H'G' and G'F'.



20. Summarize your findings.

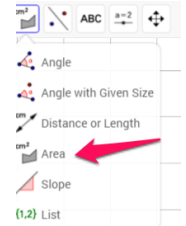
Similar Polygons Exploration

Name _____ Period _____

Open a browser and go to <http://www.geogebra.org/m/2654321>. Follow the instructions below and answer the questions.

1. Move the point marked **Center**. What do you notice? _____
2. Drag the point marked Center back to the origin and move the points in the triangle marked **Original**. What do you notice? _____
3. Compare the corresponding angle measures of $\triangle ABC$ with $\triangle A'B'C'$ as you move the vertices of the original triangle. What do you notice? _____

4. Find the ratios of the lengths of the sides of $\triangle A'B'C'$ to the lengths of the corresponding sides of $\triangle ABC$. Calculate the perimeters of the triangles. Use the **Area Measurement** tool to find the area of both triangles.



AB =	AC =	BC =	Perimeter of $\triangle ABC$ =	Area of $\triangle ABC$ =	Scale Factor =
A'B' =	A'C' =	B'C' =	Perimeter of $\triangle A'B'C'$ =	Area of $\triangle A'B'C'$ =	
Ratios:					

5. Change the scale factor. Move the vertices of the original triangle. Repeat the calculations in question 4.

AB =	AC =	BC =	Perimeter of $\triangle ABC$ =	Area of $\triangle ABC$ =	Scale Factor =
A'B' =	A'C' =	B'C' =	Perimeter of $\triangle A'B'C'$ =	Area of $\triangle A'B'C'$ =	
Ratios:					

6. Change the scale factor. Move the center and vertices of the original triangle. Repeat the calculations in question 4.

AB =	AC =	BC =	Perimeter of $\triangle ABC$ =	Area of $\triangle ABC$ =	Scale Factor =
A'B' =	A'C' =	B'C' =	Perimeter of $\triangle A'B'C'$ =	Area of $\triangle A'B'C'$ =	
Ratios:					

7. Change the scale factor. Move the center and vertices of the original triangle. Repeat the calculations in question 4.

AB =	AC =	BC =	Perimeter of $\triangle ABC$ =	Area of $\triangle ABC$ =	Scale Factor =
A'B' =	A'C' =	B'C' =	Perimeter of $\triangle A'B'C'$ =	Area of $\triangle A'B'C'$ =	
Ratios:					

8. Summarize your findings. _____

