Geometry Dilations
Homework December 16, 2013

Name_____

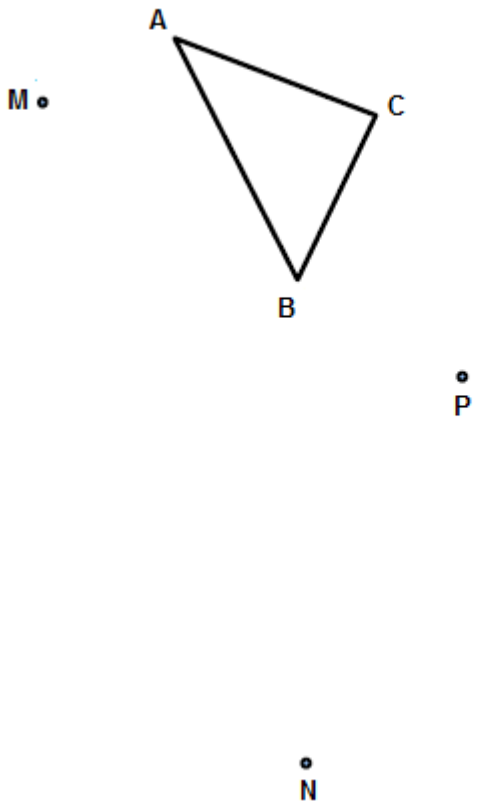
period 1 2 3 5 6

1 Given the diagram of triangle ABC

A. Use point M as the center of dilation and locate vertices of a triangle that has sides that are two times the length of triangle ABC.
HINT: Use dilation rays and a centimeter ruler to help you locate the vertices.

B. Use point N as the center of dilation and locate vertices of a triangle that has sides that are half the length of the sides of triangle ABC.
HINT: Use dilation rays and a centimeter ruler to help you locate the vertices.

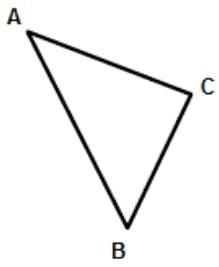
C. Use point P as the center of dilation and locate vertices of a triangle resulting from a scale factor of –1. The side lengths of ABC and its image will be equal.
HINT: Use dilation rays and a centimeter ruler to help you locate the vertices.



2 Given triangle ABC, use point A as the center of dilation to locate vertices of a triangle that has side lengths that are twice as long as the sides of ABC.

Explain how the diagram you created at the right can be used to prove the following theorem:

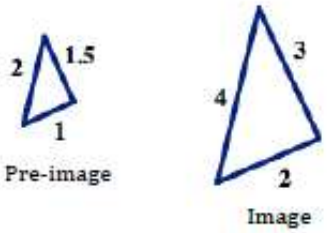
"The segment joining the midpoints of two sides of a triangle is parallel to the third side and half the length of the third side."



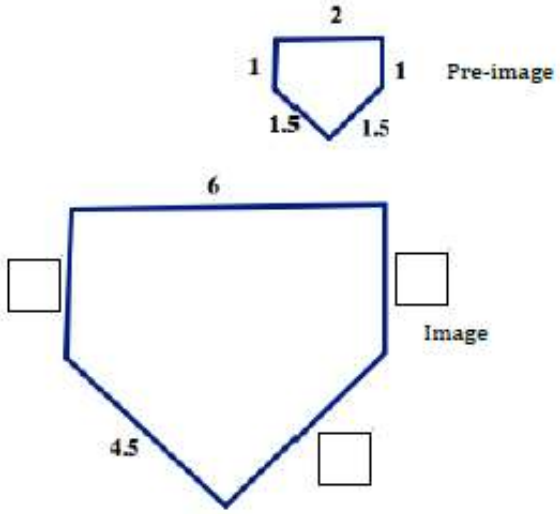
Topic: Scale factors for similar shapes.

Give the factor by which each pre-image was multiplied to create the image. Use the scale factor to fill in any missing lengths.

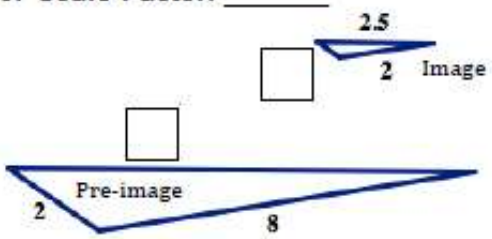
3. Scale Factor: _____



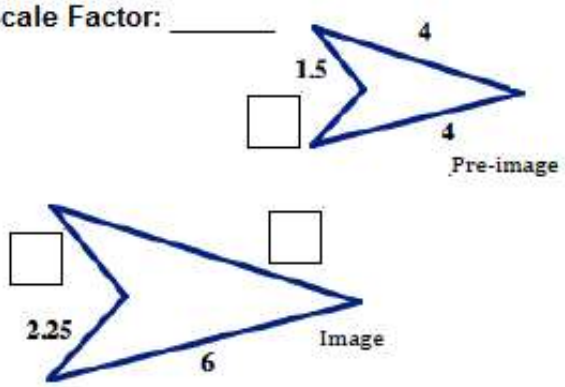
4. Scale Factor: _____



5. Scale Factor: _____

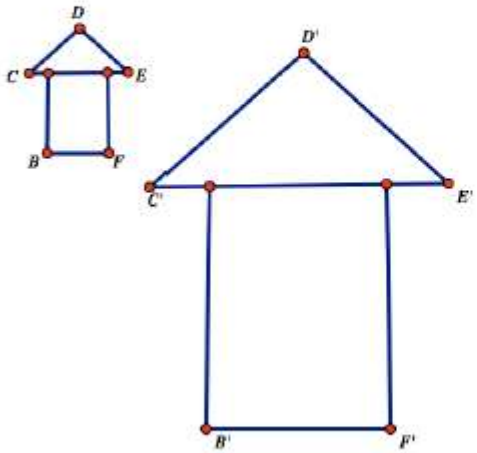


6. Scale Factor: _____

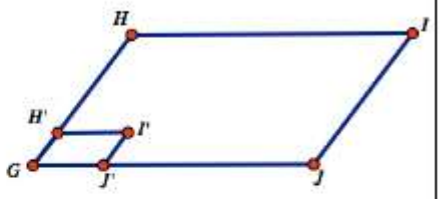


Use the given pre-image and image in each diagram to define the dilation that occurred. Include as many details as possible such as identifying the center of dilation and the scale factor ratio.

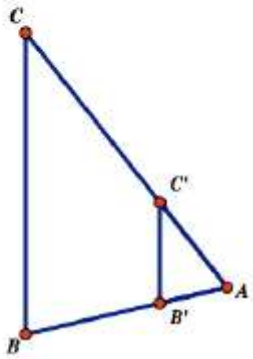
7.



8.



9.



Topic: Solving proportions

Solve each proportion. Show your work and check your solution.

Use reasoning skills in addition to algebraic skills. Reason "up & down". Reason "left & right".

1. $\frac{3}{4} = \frac{x}{20}$

2. $\frac{x}{7} = \frac{18}{21}$

3. $\frac{3}{6} = \frac{8}{x}$

4. $\frac{9}{c} = \frac{6}{10}$

5. $\frac{3}{4} = \frac{b+3}{20}$

6. $\frac{7}{12} = \frac{a}{24}$

7. $\frac{a}{2} = \frac{13}{20}$

8. $\frac{3}{b+2} = \frac{6}{5}$

9. $\frac{\sqrt{3}}{2} = \frac{\sqrt{12}}{c}$