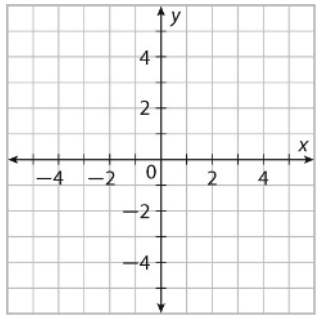
Name _____ Date _____ Class _____

LESSON 11-1

Dilations

Practice and Problem Solving: A/B

For Problems 1 and 2, apply the dilation *D* to the polygon with the given vertices. Name the coordinates of the image points, and plot the pre-image and the image. Tell the scale factor.

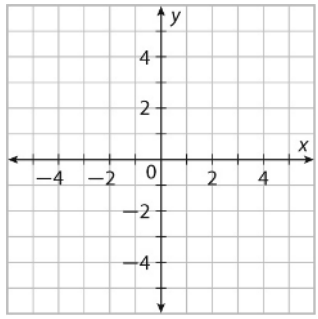


1. $D(x, y) \rightarrow (1.5x, 1.5y)$

   $G(1, -2)$, $H(1, -4)$, $J(4, -2)$

   G'(____, ____), H'(____, ____), J'(____, ____)

   Scale factor: _____



2. $D(x, y) \rightarrow \left(\frac{1}{3}x, \frac{1}{3}y\right)$

   $L(-3, 3)$, $M(3, 6)$, $N(3, -3)$

   L'(____, ____), M'(____, ____), N'(____, ____)

   Scale factor: _____

For Problems 3–6, use your graphs for Problems 1 and 2.

3. If you drew lines $\overleftrightarrow{GG'}$, $\overleftrightarrow{HH'}$, and $\overleftrightarrow{JJ'}$, on the graph for Problem 1,

   where would the lines intersect? (____, ____) This point is called the

   _____ of _____.

4. If you drew lines $\overleftrightarrow{LL'}$, $\overleftrightarrow{MM'}$, and $\overleftrightarrow{NN'}$ on the graph for Problem 2,

   where would the lines intersect? (____, ____)

5. Fill in the lengths of the segments in Problem 1. Express each ratio as a decimal.

   $\frac{G'H'}{GH} = \frac{\square}{\square} = \_\_\_\_\_$ $\frac{J'G'}{JG} = \frac{\square}{\square} = \_\_\_\_\_$

6. Fill in the lengths of the segments in Problem 2. Express each ratio in radical form, if necessary, and then as a fraction in lowest terms.

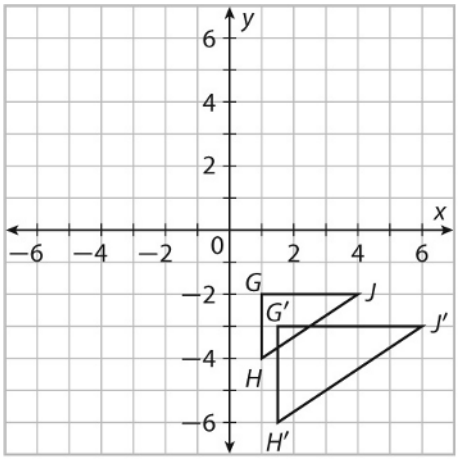
   $\frac{L'M'}{LM} \frac{\square}{\square} = \frac{\square}{\square}$ $\frac{M'N'}{MN} = \frac{\square}{\square} = \frac{\square}{\square}$ $\frac{N'L'}{NL} = \frac{\square}{\square} = \frac{\square}{\square}$

MODULE 11 Similarity and Transformations

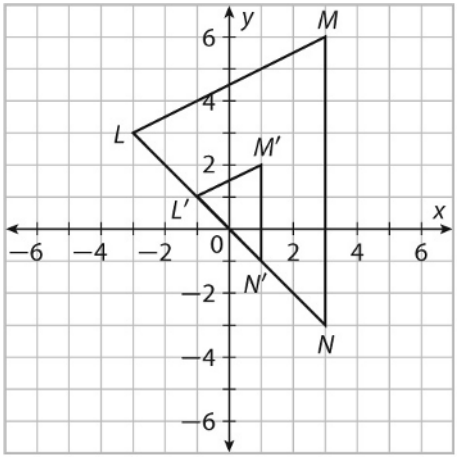
LESSON 11-1

Practice and Problem Solving: A/B

1. $G'(1.5, -3)$, $H'(1.5, -6)$, $J'(6, -3)$; 1.5



2. $L'(-1, 1)$, $M'(1, 2)$, $N'(1, -1)$; $\frac{1}{3}$



3. (0, 0); center; dilation

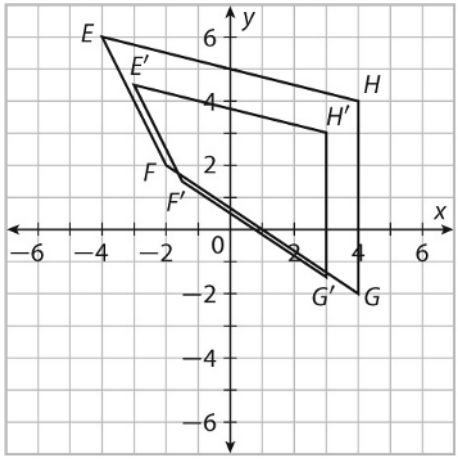
4. (0, 0)

5. $\frac{3}{2} = 1.5$; $\frac{4.5}{3} = 1.5$

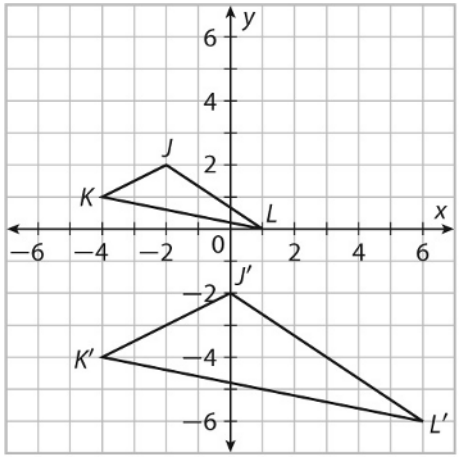
6. $\frac{\sqrt{5}}{\sqrt{45}} = \frac{1}{3}$; $\frac{3}{9} = \frac{1}{3}$; $\frac{\sqrt{8}}{\sqrt{72}} = \frac{1}{3}$

Practice and Problem Solving: C

1. $E'(-3, 4.5)$, $F'(-1.5, 1.5)$, $G'(3, -1.5)$, $H'(3, 3)$



2. $J'(0, -2)$, $K'(-4, -4)$, $L'(6, -6)$



3. $X'(-2, -1)$, $Y'(-1, 2)$, $Z'(1, 2)$