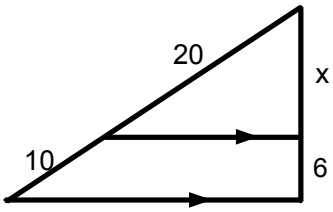
Bellwork
01/04/2012

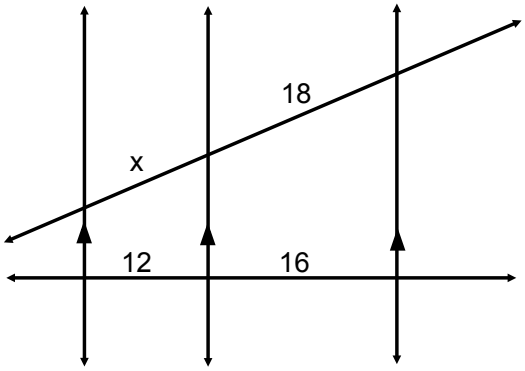
Find the value of the variable.

1.



$\frac{x}{6} = \frac{20}{10}$ $10x = 120$ $x = 12$

2.



$\frac{x}{18} = \frac{12}{16}$ $16x = 216$ $x = 13.5$

Geometry
6.7 Perform Similarity Transformations
Standard(s): 3,10

Vocabulary:

1. **Dilation: A transformation that stretches or shrinks a figure to create a similar figure.**

2. **Center of Dilation: A fixed point in which the figure is enlarged or reduced.**

3. **Scale Factor of a Dilation: The ratio of a side length of the image to the corresponding side length of the original figure.**

KEY CONCEPT *For Your Notebook*

Coordinate Notation for a Dilation

You can describe a dilation with respect to the origin with the notation $(x, y) \rightarrow (kx, ky)$, where k is the scale factor.

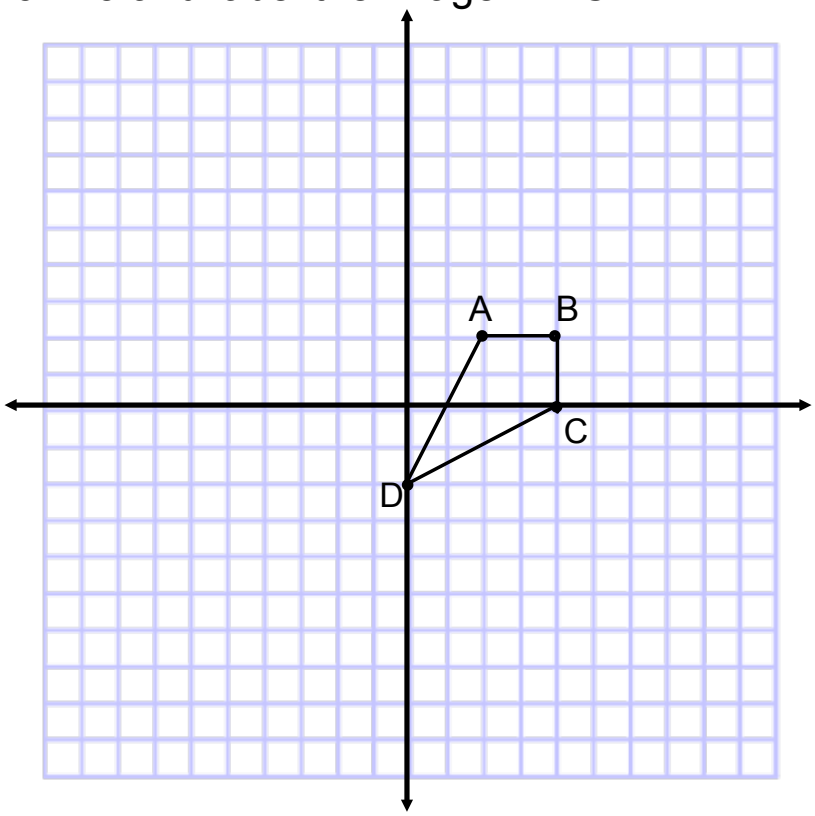
If $0 < k < 1$, the dilation is a **reduction**. If $k > 1$, the dilation is an **enlargement**.

Find Coordinates Using Dilation

Draw a dilation of quadrilateral ABCD using the given vertices. Use a scale factor of 1.5 and label the image A'B'C'D'.

A(2 , 2)
B(4 , 2)
C(4 , 0)
D(0 , -2)

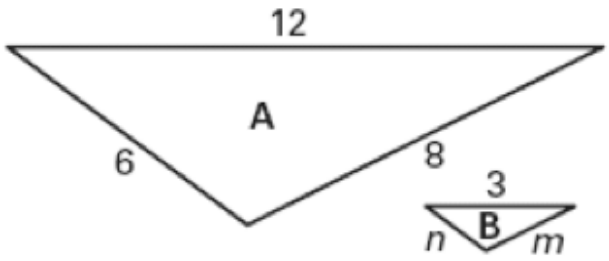
k = 1.5 or $\frac{3}{2}$



A'(3 , 3)
B'(6 , 3)
C'(6 , 0)
D'(0 , -3)

Find Variables Using Dilation

Determine whether the dilation from Figure A to Figure B is a *reduction* or an *enlargement.* Then, find the values of the variables.



$k = \frac{3}{12} = \frac{1}{4}$ Reduction

$\frac{1}{4} = \frac{m}{8}$

$4m = 8$

$m = 2$

$\frac{1}{4} = \frac{n}{6}$

$4n = 6$

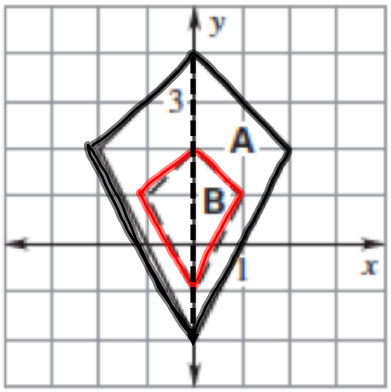
$n = \frac{3}{2}$ or 1.5

Pull

Determine the Type of Dilation

Determine whether the dilation from Figure A to Figure B is a *reduction* or an *enlargement*. Then find its scale factor.

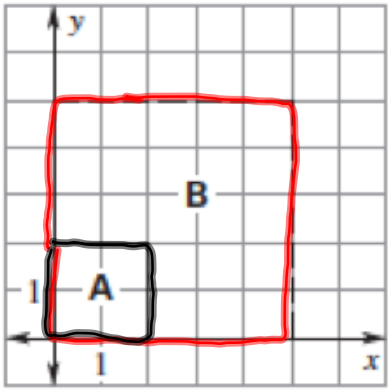
Reduction



A = 6
B = 3

$\frac{3}{6} = \frac{1}{2}$

Enlargement



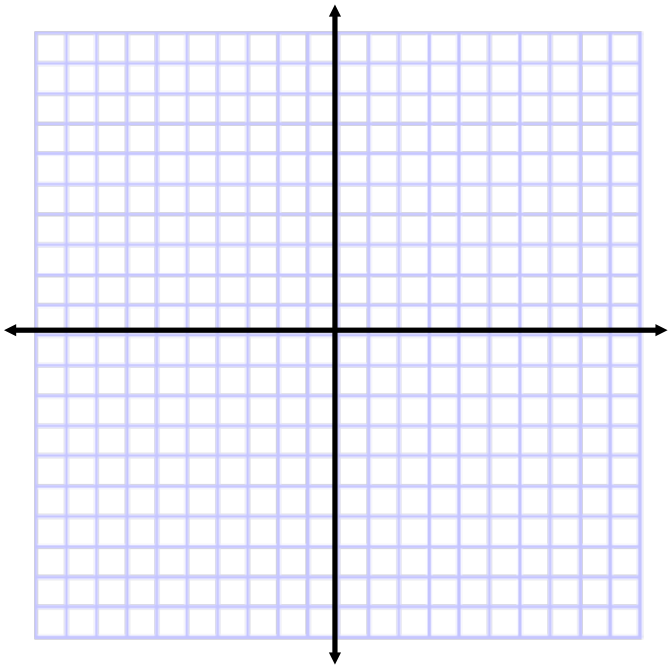
A = 2
B = 5

$\frac{5}{2}$

Finding Coordinates Using a Scale Factor

Find the coordinates of L, M, and N so that ΔLMN is a dilation of ΔPQR with a scale factor of *k*. Sketch ΔPQR and ΔLMN.

A. P(5,-5), Q(10,-5), R(10,5); *k*=0.4



Homework Assignment

Worksheet 6.7C