

Name:

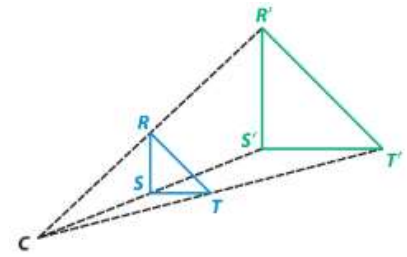
Date:

Period:

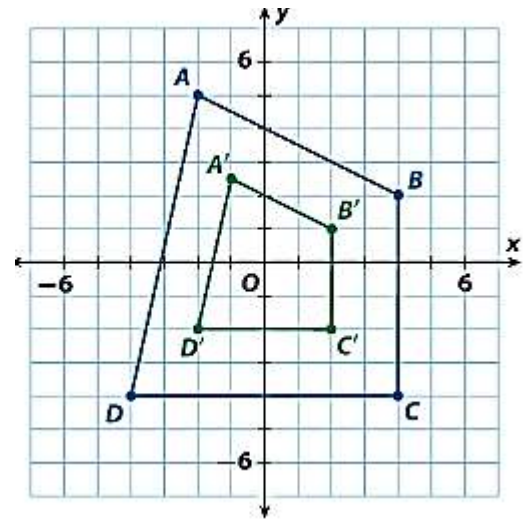
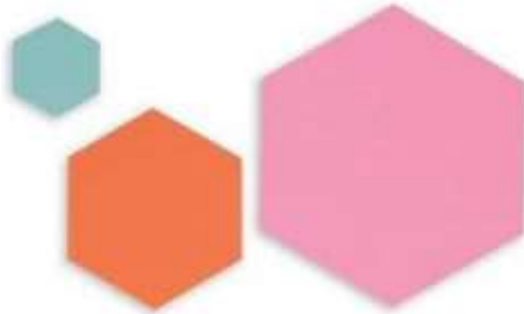
Lesson: Transformations- Dilations

Exploring Dilations

Every dilation has a fixed point called the **center of dilation** located where the lines connecting corresponding parts of figures intersect.



Complete the table. Record the x - and y -coordinates of the points in the two figures and the ratios of the x -coordinates and the y -coordinates.

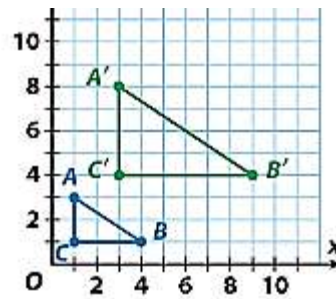


Vertex	x	y	Vertex	x	y	Ratio of x -coordinates ($A'B'C'D' \div ABCD$)	Ratio of y -coordinates ($A'B'C'D' \div ABCD$)
A'			A				
B'			B				
C'			C				
D'			D				

Write a conjecture about the ratios of the coordinates of a dilation image to the coordinates of the original figure.

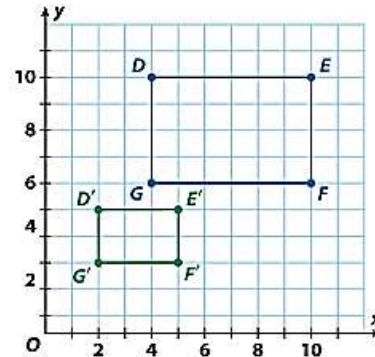
As you have seen in the two activities, a dilation can produce a larger figure (an **enlargement**) or a smaller figure (a **reduction**). The **scale factor** describes how much the figure is enlarged or reduced. The scale factor is the ratio of a length of the image to the corresponding length on the original figure.

An art supply store sells several sizes of drawing triangles. All are dilations of a single basic triangle. The basic triangle and one of its dilations are shown on the grid. Find the scale factor of the dilation.

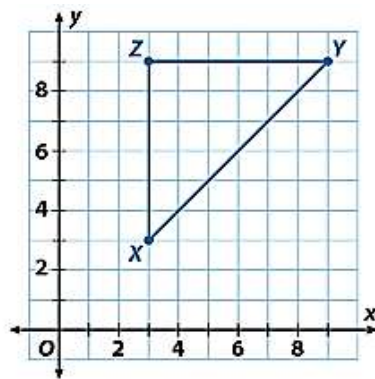


Use the graph of rectangle **DEFG**.

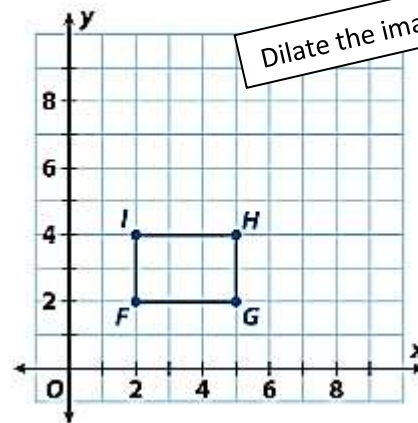
Find the scale factor of the dilation.



Graph the image of $\triangle XYZ$ after a dilation with a scale factor of $\frac{1}{3}$ and the origin as its center.

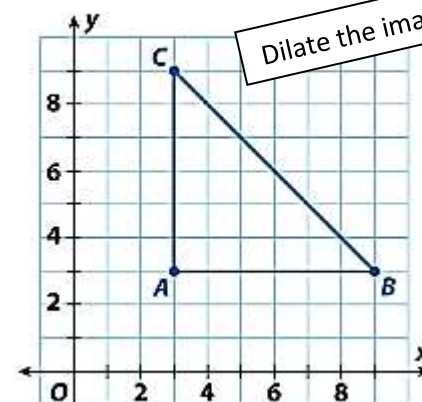


scale factor of 1.5



Dilate the image given the scale factor

scale factor of $\frac{1}{3}$



Dilate the image given the scale factor

Critical Thinking A triangle has vertices $A(-5, -4)$, $B(2, 6)$, and $C(4, -3)$. The center of dilation is the origin and $(x, y) \rightarrow (3x, 3y)$. What are the vertices of the dilated image?
