

Name _____
Date _____

Math 8
Geometry 10

More Transformational Geometry - **Dilation**

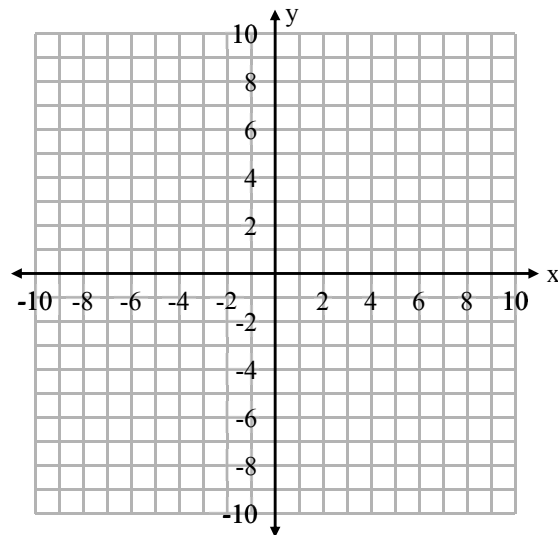
Definition:

Properties that are preserved:

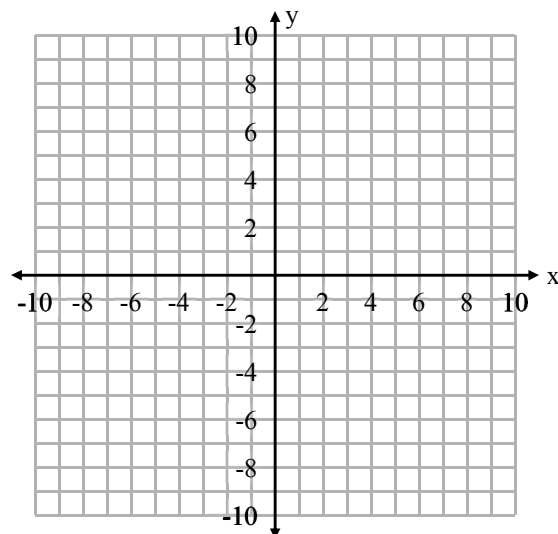
To dilate with the origin as the center, multiply both the x and y-coordinate by the given scale factor.

Examples:

1) Graph the following triangle and label the points. $A(-2, -2)$ $B(1, -1)$ $C(0, 2)$ Now dilate the triangle with the center of dilation at the origin and a scale factor of 2. Graph and label the new triangle.

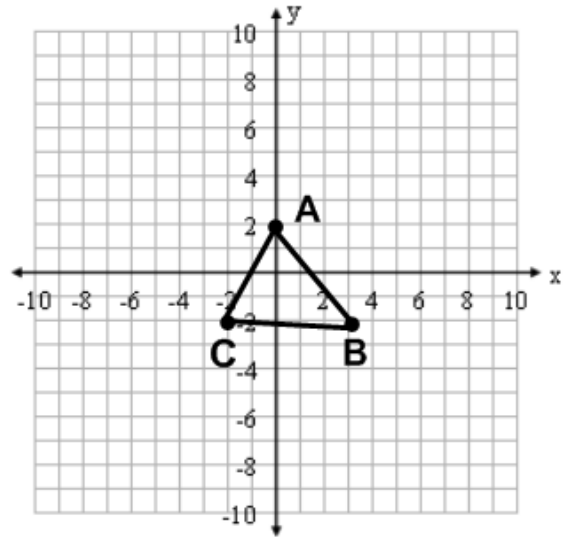


2) Graph the pentagon $Q(0, 0)$ $R(3, 3)$ $S(6, 3)$ $T(6, -3)$ $W(3, -3)$. Now dilate the figure with the center of dilation as the origin and a scale factor of $\frac{1}{3}$. Graph and label the new figure.

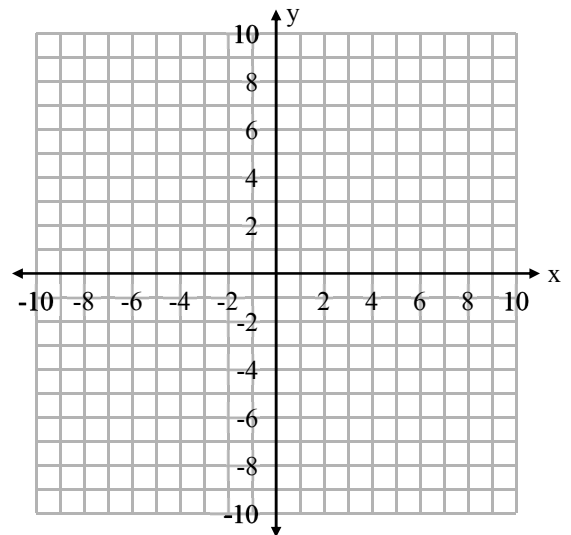


Now Let's Practice on the Next Pages

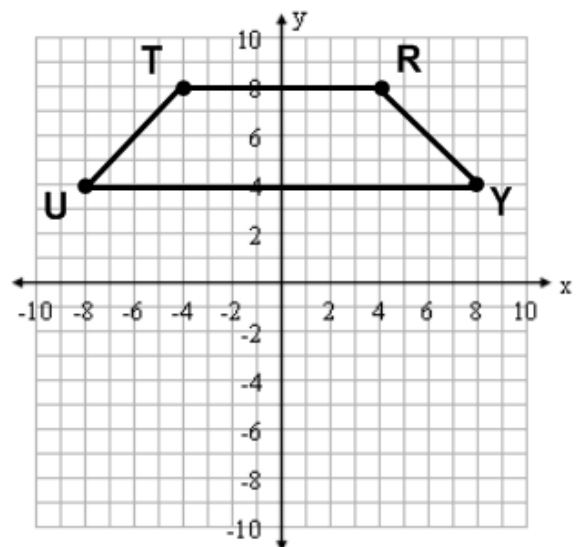
1.) Dilate the following triangle with a scale factor of 3.



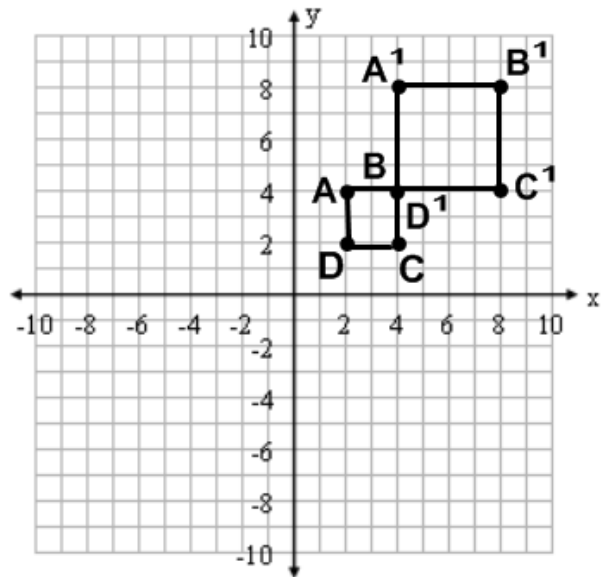
2) Triangle RST has the coordinates R(0, 2) S(6, 4) and T(8, 2). Dilate this triangle with a scale factor of $\frac{1}{2}$.



3) Dilate the trapezoid with a scale factor of $\frac{1}{4}$.



4) Find the scale factor of the dilation.



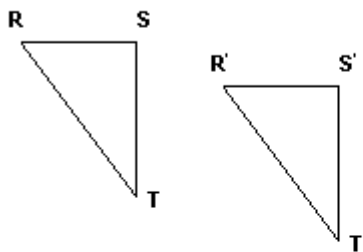
The best description of a dilation of a figure is

1. an enlargement or a reduction of the figure
2. a slide of the figure
3. a turning of the figure about some fixed point
4. a mirror image of the figure

Which transformation does *not* usually preserve size?

1. translation
2. rotation
3. reflection
4. dilation

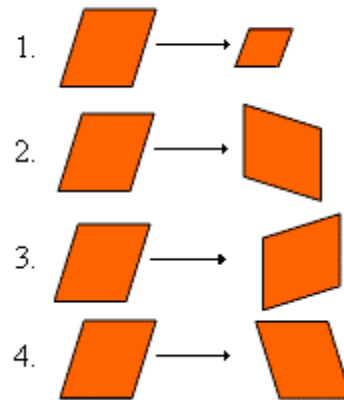
In the diagram, $\triangle R'S'T'$ is the image of $\triangle RST$.



Which type of transformation is shown in this diagram?

1. dilation
2. reflection
3. rotation
4. translation

Which of the following is considered a dilation?



$\frac{4}{3}$

A dilation is performed with the center of the figure at the origin using a scale factor of $\frac{4}{3}$. If one of the coordinates was $(6, -3)$, what would the new coordinates of this point be after the dilation?

If an image with the coordinates $(3, 4)$, $(1, 2)$ and $(-1, 0)$ is dilated using a scale factor of 4, what are the coordinates of the new image?

1. $(3, 4)$, $(1, 2)$ and $(-1, 0)$
2. $(12, 16)$, $(4, 8)$ and $(-4, 0)$
3. $(4, 3)$, $(2, 1)$ and $(0, -1)$
4. $(9, 12)$, $(3, 6)$ and $(-3, 0)$