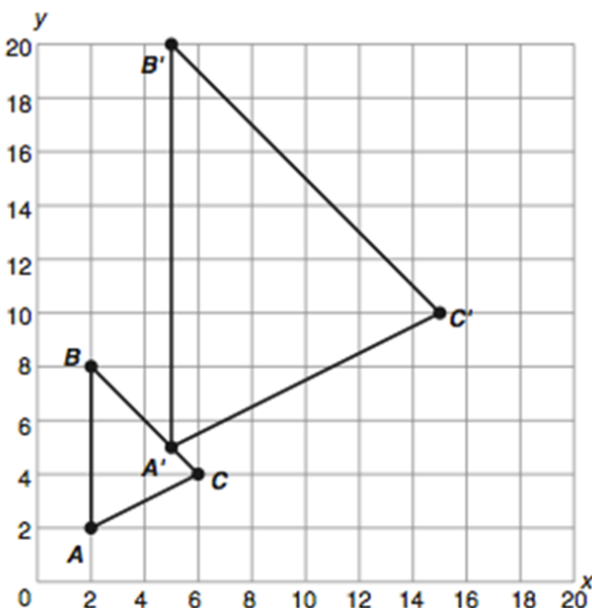


- 1) Determine the magnitude of the dilation through the origin seen on the coordinate plane below. Write down the coordinates of pre-image and image of triangle ABC.



A: _____ A': _____

B: _____ B': _____

C: _____ C': _____

What do you notice about the difference between the coordinates of the pre-image and the image? Can you come up with a general rule of coordinate points dilated through the origin?

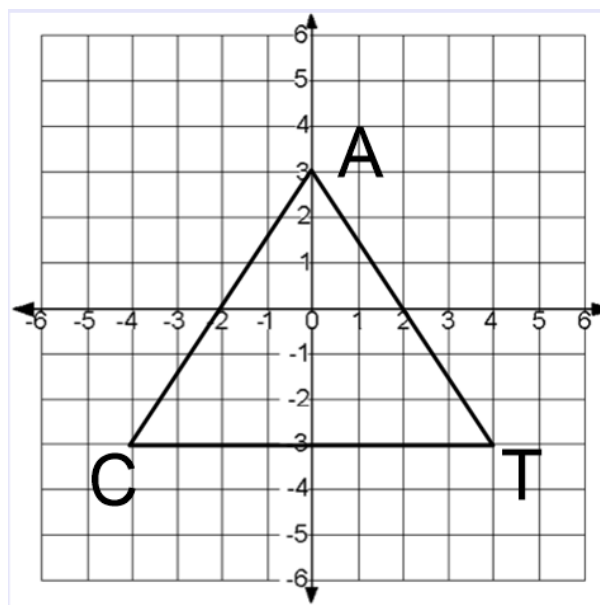
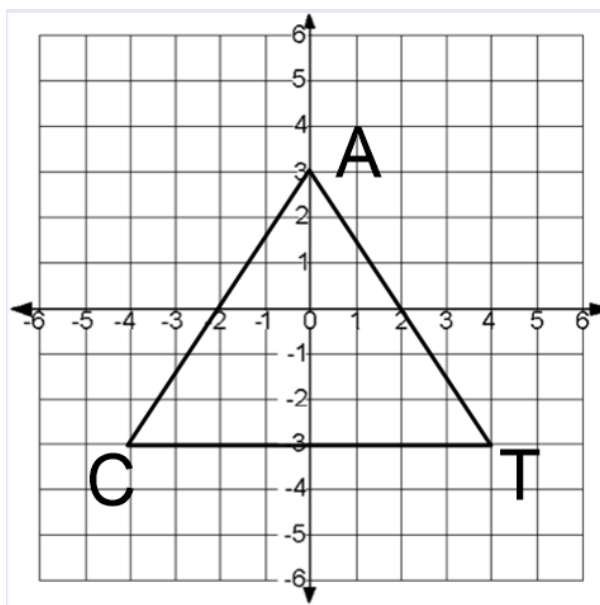
$(x, y) \rightarrow$

- 2) On the grid above, draw a dilation of ABC with a scale factor of 2. Label this image A''B''C''.

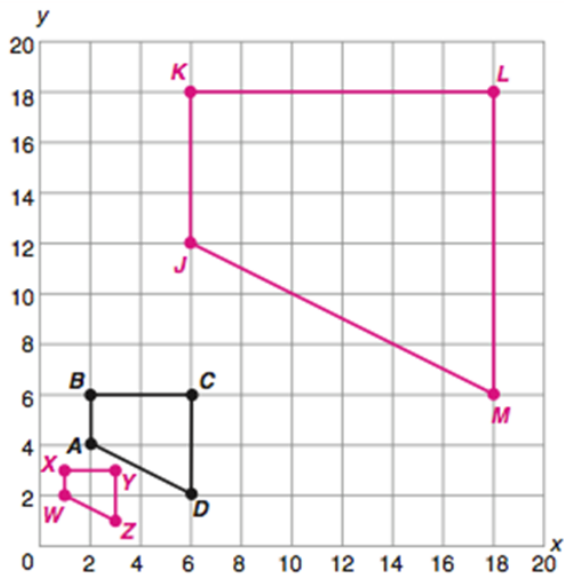
A'': _____ B'': _____ C'': _____

- 3) Does the point of projection matter?

In the first image, draw and give the coordinates of the resulting image if CAT was dilated by $\frac{1}{2}$ at the origin. Then do the same with the projection point at A (instead of the origin) in the second image.



4) In the figure below, Quadrilaterals $WXYZ$ and $JKLM$ are images of pre-image $ABCD$.

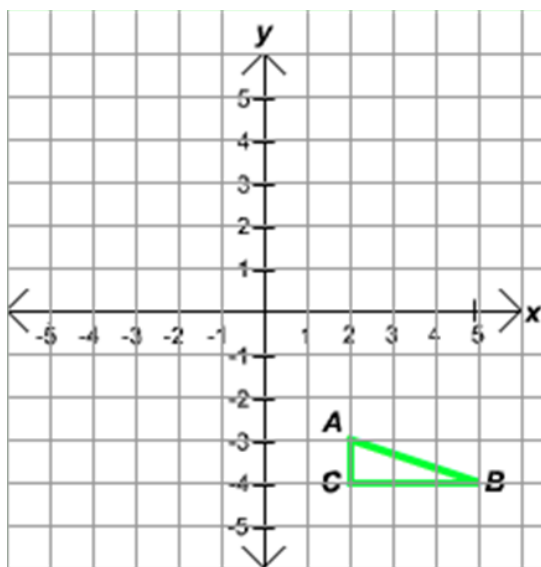


a) What is the scale factor from $ABCD$ to $JKLM$?

b) What is the scale factor from $ABCD$ to $WXYZ$?

5) a) What if the scale factor is a negative number? Make a conjecture as to what you think the result will be.

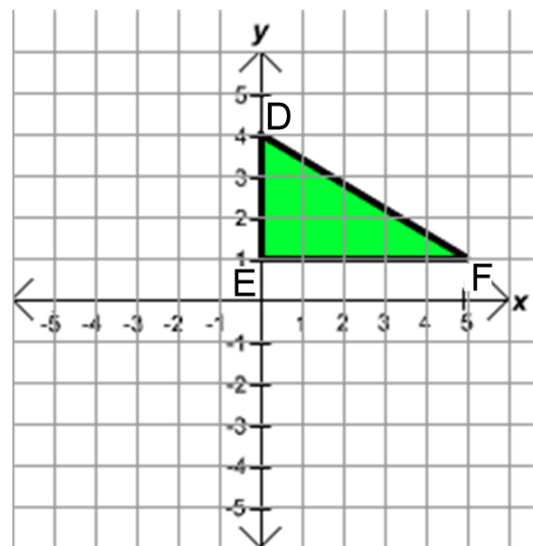
b) Dilate Triangle ABC below through the origin with a scale factor of -3 and dilate Triangle DEF below through the origin with a scale factor of -2 . What are the resulting coordinates of the images?



$A' =$

$B' =$

$C' =$



$D' =$

$E' =$

$F' =$