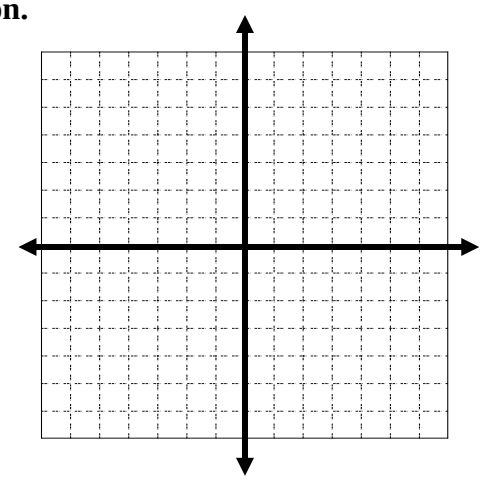
Geometry **Transformations Review** **Name _____**

Please show all work, when necessary, for full credit. **Period _____ Date _____**

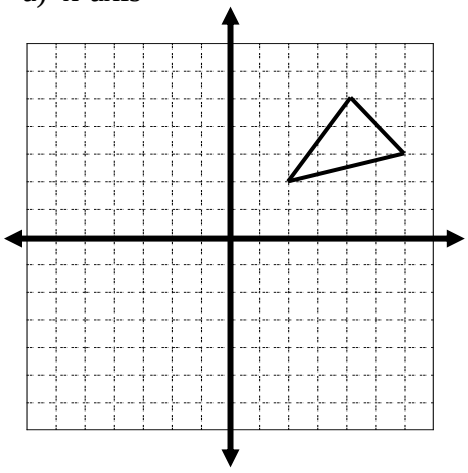
1) The vertices of $\triangle$MNO are M(–2, 4), N(–1, 1) and O(3, 3). Graph and label the image of the triangle using prime notation.

$(x, y) \rightarrow (x + 4, y - 6)$

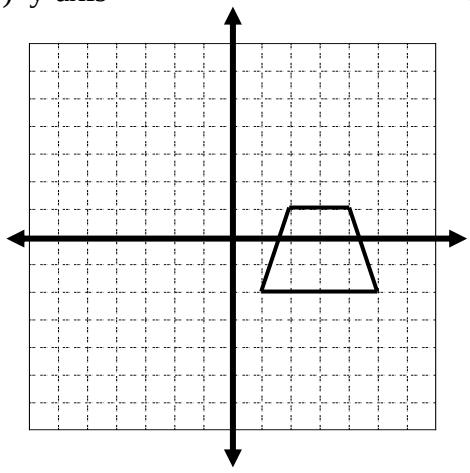


2) Graph the reflection of the polygon in the given line.

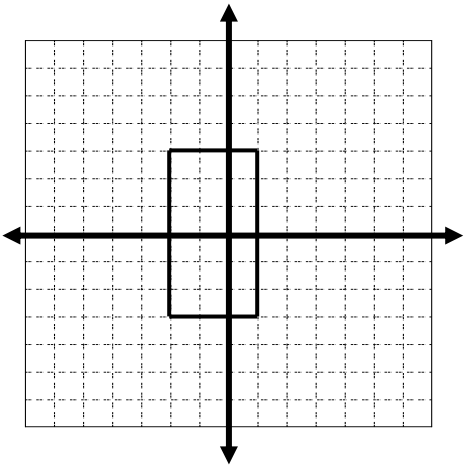
a) x-axis



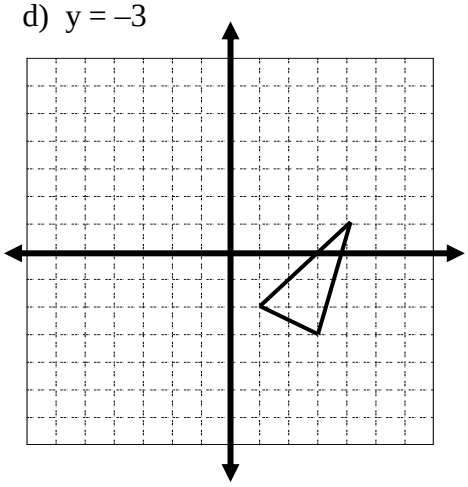
b) y-axis



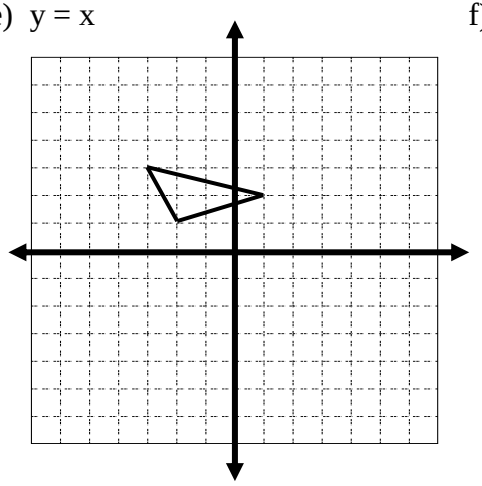
c) x = 2



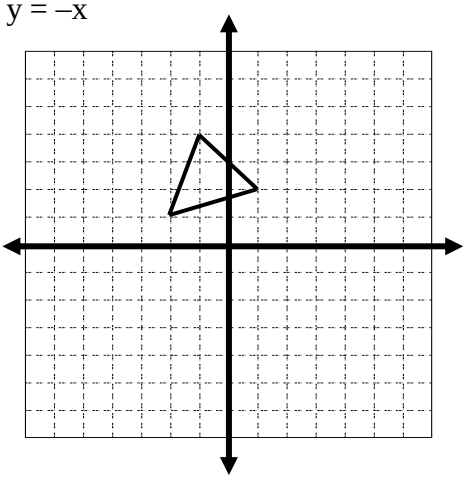
d) y = –3



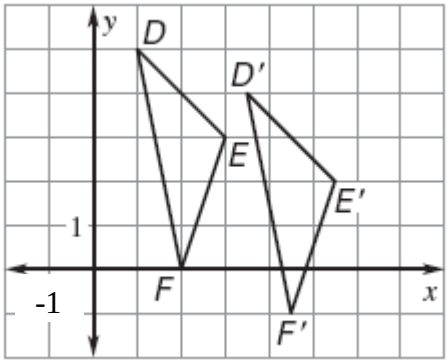
e) y = x



f) y = –x



3) Write a rule that translates the ΔDEF to $\Delta D'E'F'$.



4) Given the following coordinates of a point and a line of reflection, determine the coordinates of the image.

a) A(3, –5) in the *x*-axis

b) B(–2, 7) in the *y*-axis

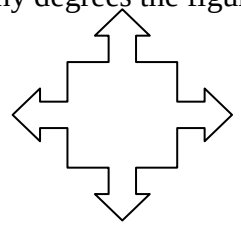
c) C(4, 6) in the line $y = x$

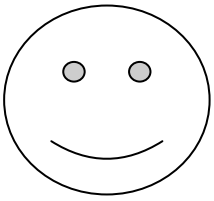
d) D(2, 4) in the line $y = -x$

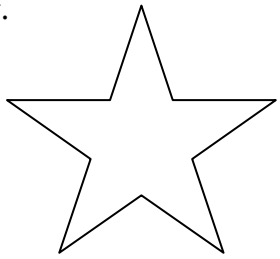
e) E(3, 1) in the line $y = 3$

f) F(8, –3) in the line $x = -5$

5) Determine whether the figure has rotational symmetry. If so, describe any and all rotation(s) (how many degrees the figure must be rotated) that will map the figure onto itself.

a) 

b) 

c) 

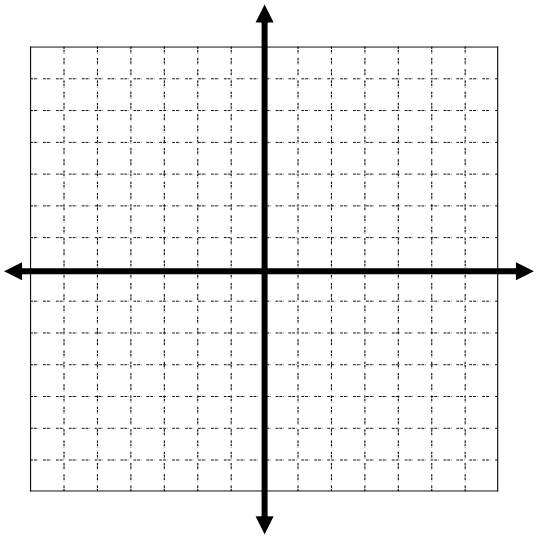
6) What does it mean for a transformation to be an isometry?

7) Use the translation $(x, y) \rightarrow (x + 3, y - 2)$.

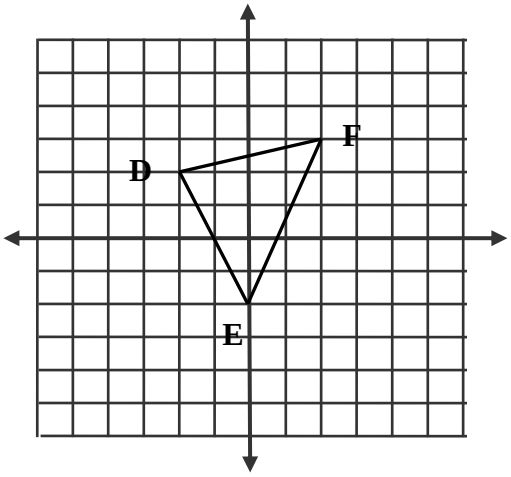
a) What is the image of (–1, 5)?

b) What is the preimage of (–4, –1)?

8) The vertices of ΔABC are A(–4, 4), B(–5, 0), and C(–1, 3). First, translate the graph using the translation $(x, y) \rightarrow (x + 6, y - 1)$. Label this image with prime notation. Then reflect that image over the y-axis. Label the final image with double prime notation.



9) Dilate the figure with a scale factor of 2.



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