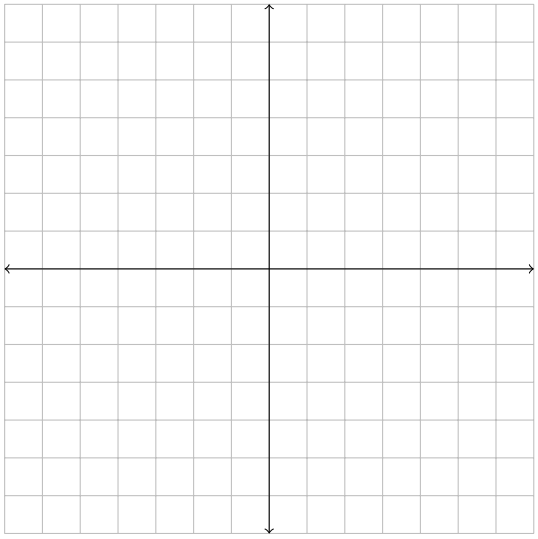
Names: _____ _____ _____

Activity #5: Transformations **College Algebra**

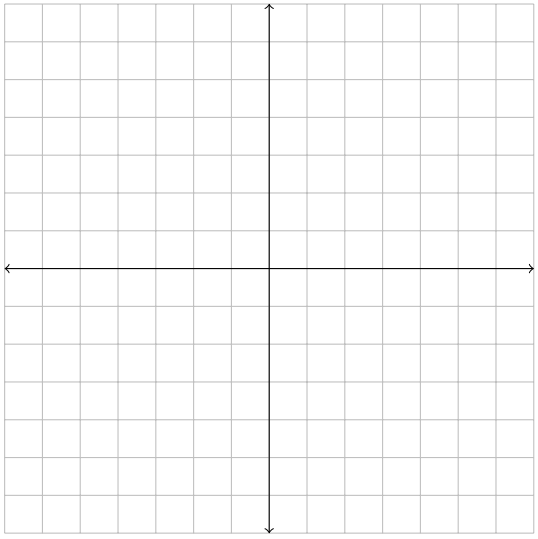
1. Sketch the graph of the following equation in the space provided.

$$(x+2)^2 + (y+3)^2 = 1$$



2. Sketch the graph of the following equation in the space provided.

$$\left(\frac{1}{2}(x-3)\right)^2 + (y-4)^2 = 1$$

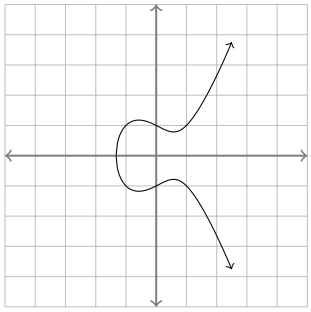


3. Fill in the boxes in the following statement.

   Replacing all the xs in an equation by $\square$ and all the ys by $\square$ will shift the equation's graph right by 7 units followed by a horizontal stretch by a factor of 2, and will shift the graph up by 6 units followed by a vertical stretch by a factor of 3.

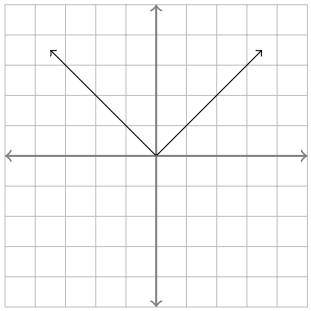
4. Graphically transform the following graph in the space provided.

   Shift right by 2 unit(s) and shift down by 1 unit(s).

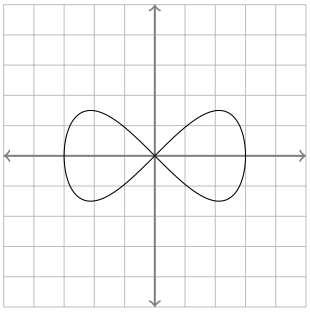


5. Graphically transform the following graph in the space provided.

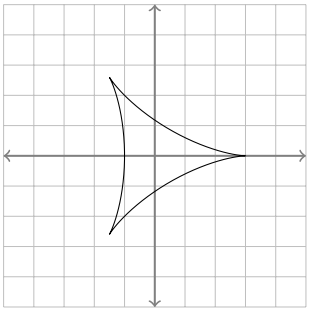
   Stretch horizontally by a factor of 1/2.



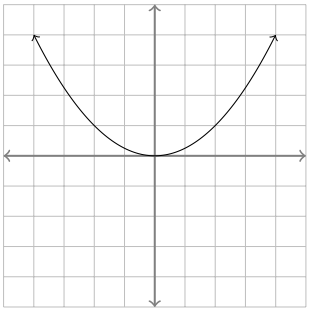
6. Determine whether or not the following graphs are symmetric across the x-axis, across the y-axis, or about the origin.



x-axis: yes/no
y-axis: yes/no
origin: yes/no



x-axis: yes/no
y-axis: yes/no
origin: yes/no



x-axis: yes/no
y-axis: yes/no
origin: yes/no

7. Determine whether or not the following equations are symmetric across the x-axis, across the y-axis, about the origin, or none of the three.

   (a) $xy + y^2 = 2$

   (b) $x^4 + y^4 = 1$

   (c) $x^3 = y^2 + 1$