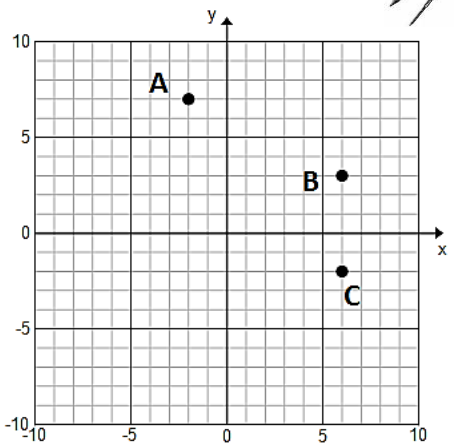
10D You Spin Me Round (Rotate)

Name: _____ Per: ____

SHOW YOUR WORK AND WORK IN PENCIL

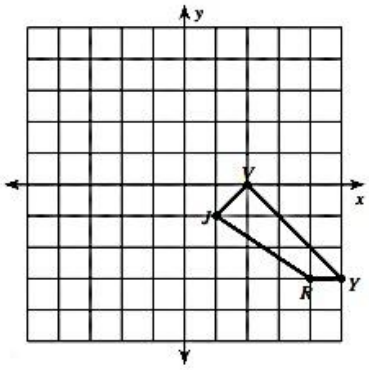
Due Date: March 20th / March 21st

1. Rotate the following and **accurately** label each new image:
   a. Rotate point A CCW 90° about the origin. Label A'.
   b. Rotate point A 180° about the origin. Label A''.
   c. Rotate point A CCW 270° about the origin. Label A'''.
   d. What do you notice about the point of rotation $(0,0)$ and $A, A', A'', and\ A'''$? _____
   e. Do the same 3 rotations for point B and C about the point $(0,0)$.
   f. Putting your **compass** on the point of rotation, what do you notice about the points $B, B', B'', and\ B'''$? _____

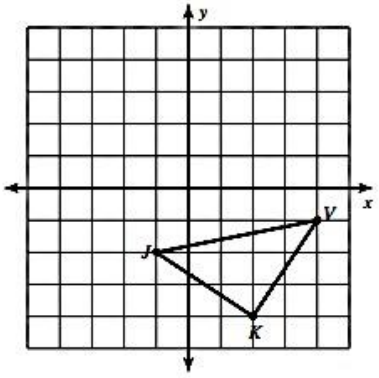


2. **Perform the following rotations counter-clock wise (CCW) and label your new image.**

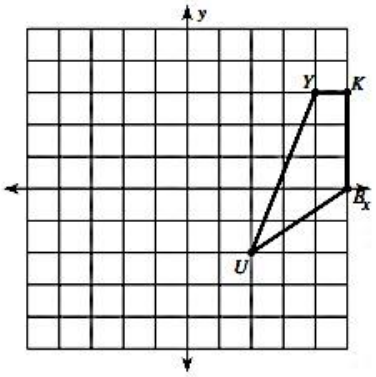
a. Rotate 180° about $(0,0)$



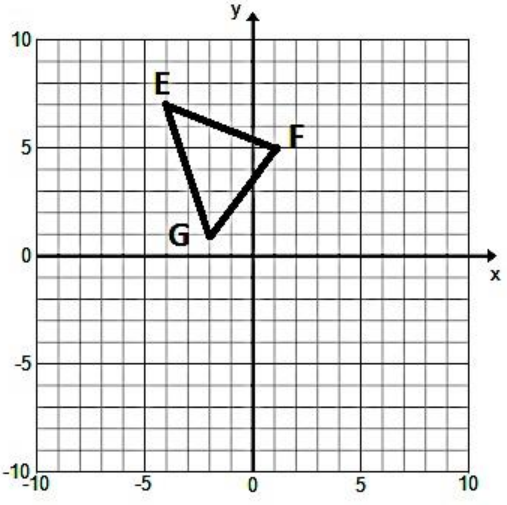
b. Rotate 90° about $(0,0)$



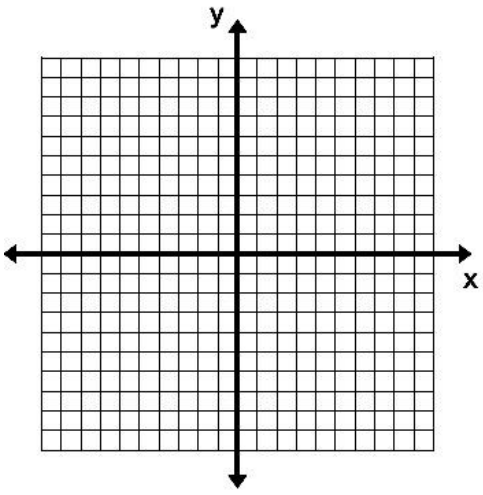
c. Rotate 270° about the origin



3. **Perform the following rotating on ΔEFG**
   a. Rotate ΔEFG CCW 90° about $(0,0)$ and label as $\Delta E'F'G'$.
   b. Rotate ΔEFG 180° about $(0,0)$ and label as $\Delta E''F''G''$.
   c. Rotate ΔEFG CCW 270° about $(0,0)$ and label as $\Delta E'''F'''G'''$.



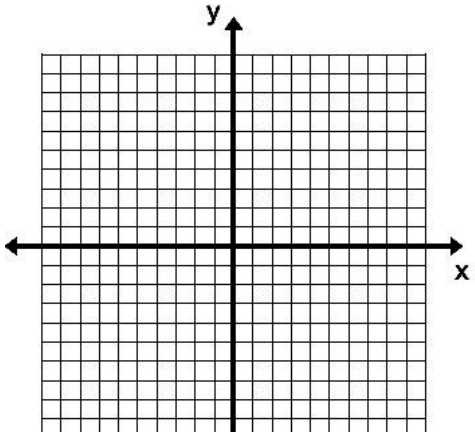
4. The vertices of ΔABC are **A(−5,1), B(−3,6), C(2,3).**
   a. Plot and label ΔABC on the coordinate plane.
   b. Reflect ΔABC over $y = 1$ and label the new image as $\Delta A'B'C'$.
   c. Reflect $\Delta A'B'C'$ over $y = -4$ and label the new image as $\Delta A''B''C''$.
   d. What **one** transformation would be the same as this double reflection? _____



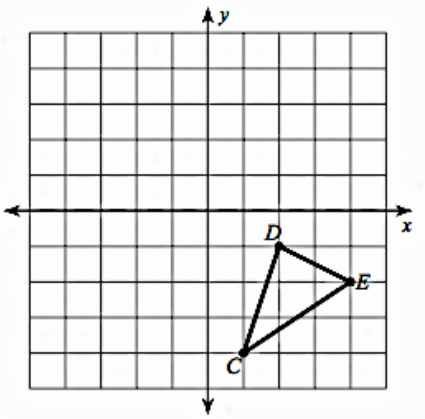
5. **Use the grid at right to answer the following questions.**
   a. Plot the points $A(-5,8)$ and $B(3,-2)$.
   b. Find the midpoint of $\overline{AB}$ on the grid. _____
   c. Mathematically find the midpoint of the $\overline{AB}$ without the grid.

   d. Find the perpendicular bisector $\overline{AB}$.

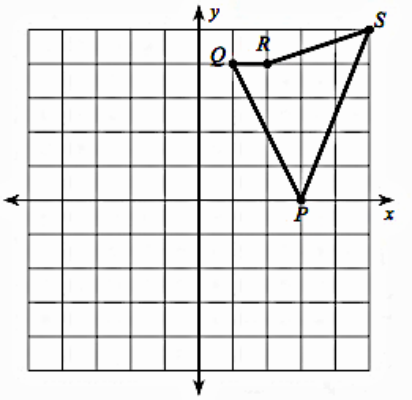
   e. CONSTRUCT the perpendicular bisector for $\overline{AB}$.
   f. Find the length (distance) of the $\overline{AB}$. **SYW.**



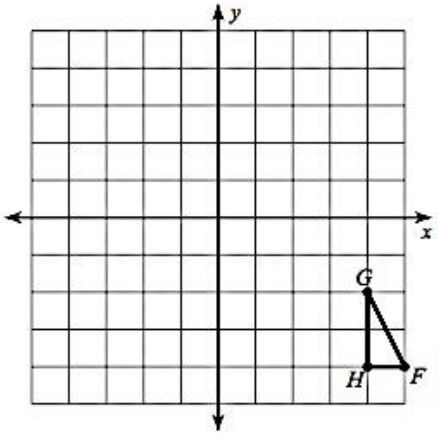
6. **Perform the following on ΔCDE and label.**
   a. Rotate 180° about the origin
   b. Reflect ΔCDE over the x-axis



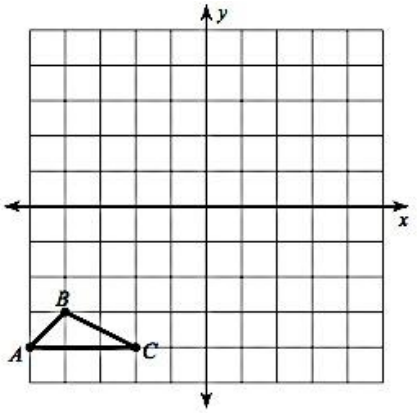
7. **Perform the following on $PQRS$ and label.**
   a. Rotate CCW 90° about the origin
   b. Reflect over the line $y = -x$



8. **Reflect ΔFGH over $y = \frac{1}{2}x - 4$ and label.**
   a. Draw lines from F to F', G to G'' and H to H'.
   b. What do you notice about these three lines?



9. **Reflect ΔABC over $y = -2x - 3$ and label.**
   a. Draw a line from B to B'
   b. What do you notice about this line and your line of reflection?



10. Use the end points of A $(5,-8)$ and B $(-2,13)$ to a line segment.
    a. What is the slope of the line segment $\overline{AB}$? _____ What is the slope of the line perpendicular to $\overline{AB}$?__
    b. What is the midpoint of the line segment $\overline{AB}$? _____
    c. Write the equation of the perpendicular bisect of line segment $\overline{AB}$ _____