Name: _____ Period: _____ Date: _____

Transformations Quiz REVIEW

1. Write the rule for each transformation:

   a) Translate 4 units left and 2 units down $(x,y) \rightarrow (x-4, y-2)$

   b) Reflect across the x-axis $(x,y) \rightarrow (x, -y)$

   c) Rotate 90° clockwise about the origin $(x,y) \rightarrow (y, -x)$

   d) Reflect across the y-axis $(x,y) \rightarrow (-x, y)$

   e) Rotate 180° about the origin $(x,y) \rightarrow (-x, -y)$

   f) Reflect across y=x $(x,y) \rightarrow (y, x)$

   g) Rotate 90° counterclockwise about the origin $(x,y) \rightarrow (-y, x)$

   h) Reflect across y=-x $(x,y) \rightarrow (-y, -x)$

2. Reflect the polygon over the y-axis.
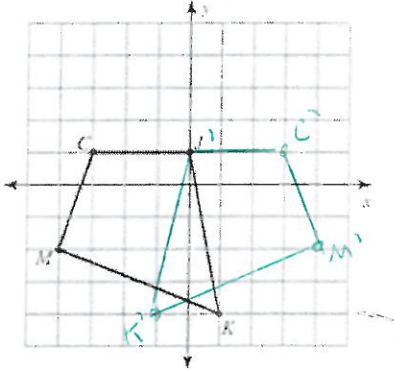
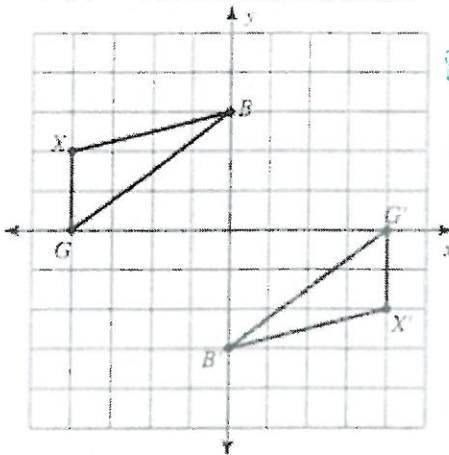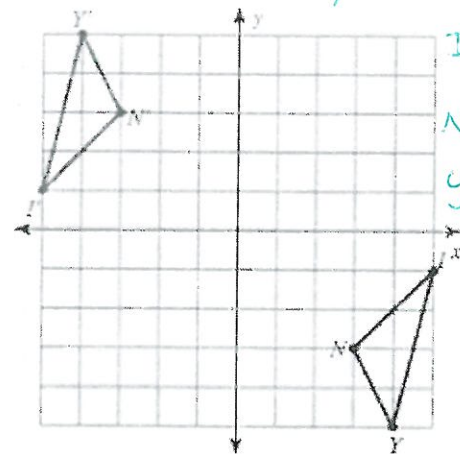3. Translate by the vector <5,-3>.
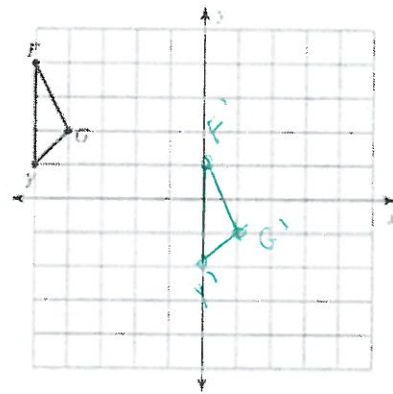
For #4 and #5, write the rule for each transformation.

4. $(x,y) \rightarrow$ _____$(-x, -y)$_____

$B(0,3)$ $B'(0,-3)$

$G(-4,0)$ $G'(4,0)$

$X(-4,2)$ $X'(-4,-2)$

5. $(x,y) \rightarrow$ _____$(-x, -y)$_____

$I(5,-1)$ $I'(-5,1)$

$N(3,-3)$ $N'(-3,3)$

$Y(4,-5)$

6. If two parallel lines are 30 cm apart, then a composition of two reflections across the lines is equivalent to a ___60___ cm translation.

7. If two intersecting lines form an acute angle of ___20___°, then a composition of two reflections across the intersecting lines is equivalent to a 40° rotation.

8. A translation of <10,-3> followed by a translation of <-7,1> is equivalent to the single translation ___⟨3, -2⟩___

9. Describe the transformation given by the ordered pair rule $(x, y) \rightarrow (-y, x)$. Remember to be specific.

   90° clockwise rotation about origin

10. Give the ordered pair rule that reflects a figure across the x-axis. $(x,y) \rightarrow$ ___(x, -y)___.

For #11 and #12, complete the following compositions of transformations on each polygon. Then describe what 2 transformations occurred. Be specific!

10. $(x,y) \rightarrow (x+4, -y-1)$

   1st: __Reflect across X-axis__

   2nd: __Translate 4 units right and 1 unit down__

   I(-5,-1) → I'(-1,0)
   P(-4,-2) → P'(0,1)
   w(-2,3) → w(2,-4)
   S(-2,1) → S(2,2)
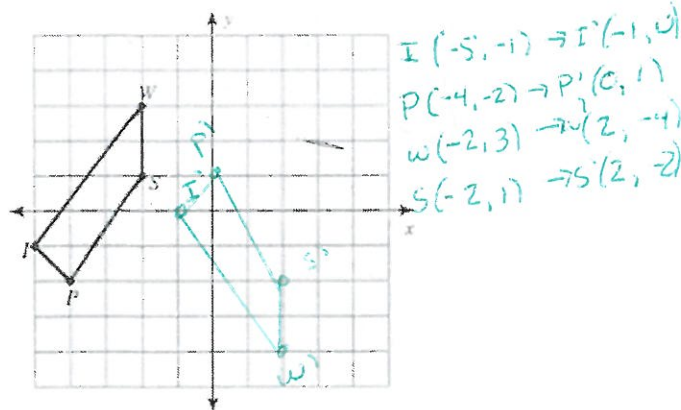
11. $(x,y) \rightarrow (2y, 2x)$

   1st: __reflect across the line y=x__

   *order doesn't matter

   2nd: __dilate by a scale factor of 2__

   H(2,3) → H'(6,4)
   a(-2,1)