Homework 8-4

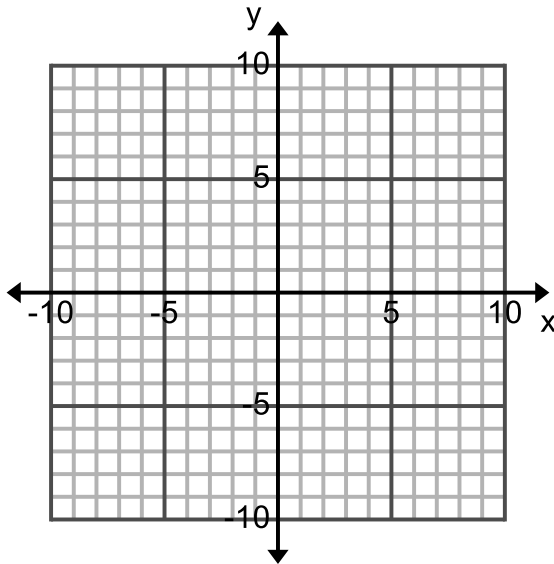**Sec 1 Honors**   **Composition of Transformations**   **Unit 8**

Graph and label the image of $A(3,-5)$ after the described glide reflection. Write the new coordinates.

1. Translation: $(x,y) \rightarrow (x, y-4)$
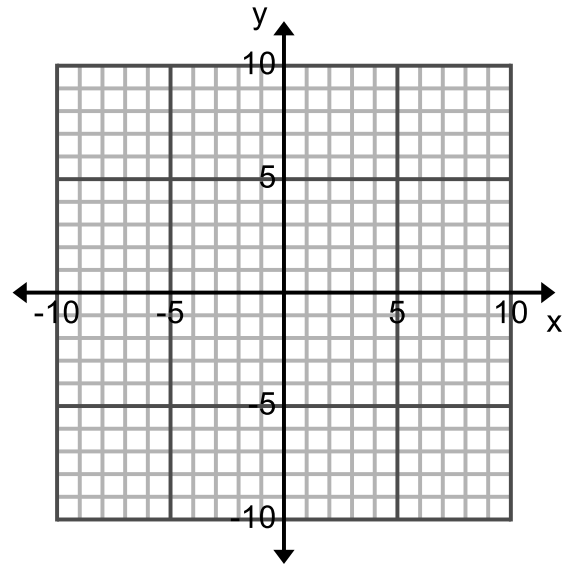
Reflection: across the y-axis

New Coordinates:_____

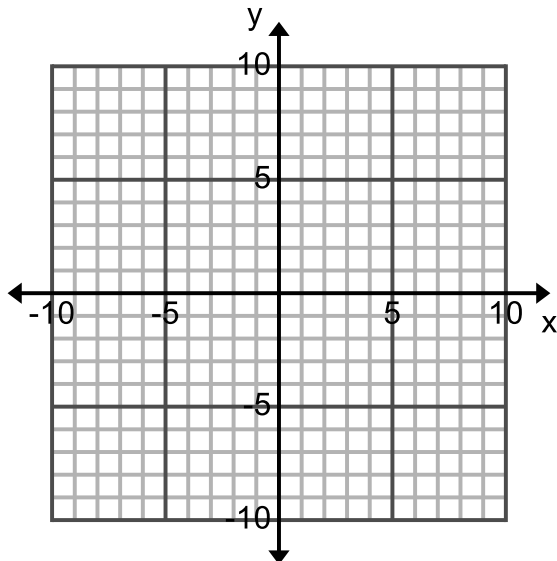**3.** Translation: $(x,y) \rightarrow (x-6, y-1)$

Reflection: in the y-axis

New Coordinates:_____

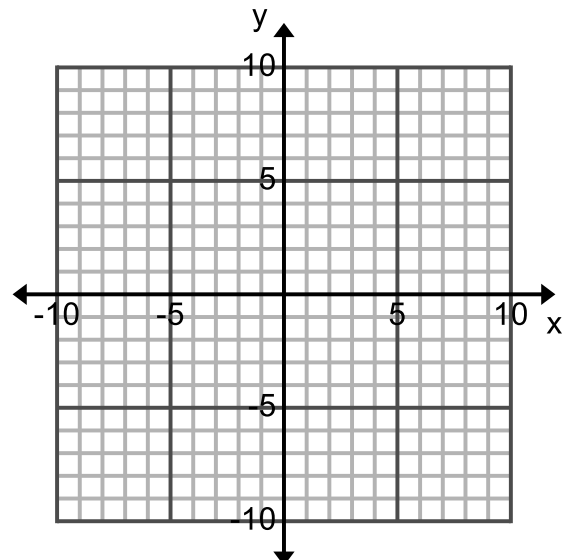**2.** Translation: $(x,y) \rightarrow (x+4, y+1)$

Reflection: about the x-axis

New Coordinates:_____

4. Translation: $(x,y) \rightarrow (x-3, y-3)$

Reflection: about the x-axis

New Coordinates:_____

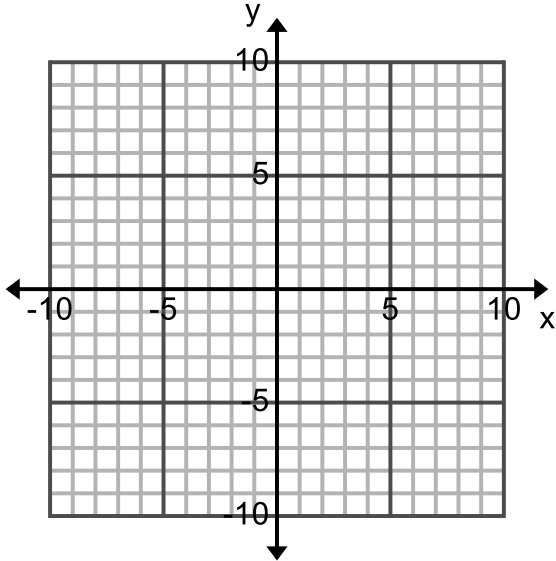**Graph and label $\triangle PQR$ and every image following the composition of transformations in the order they appear. Write the vertices of the final image.**

5. $P(4,2)$, $Q(7,0)$, $R(9,3)$

   Translation: $(x,y) \rightarrow (x-2, y+3)$

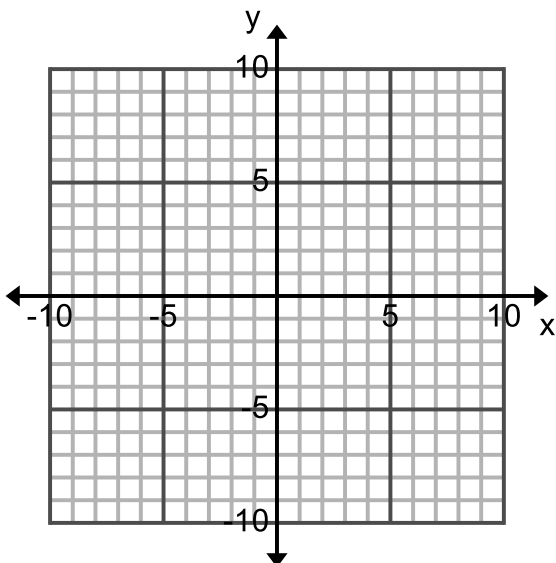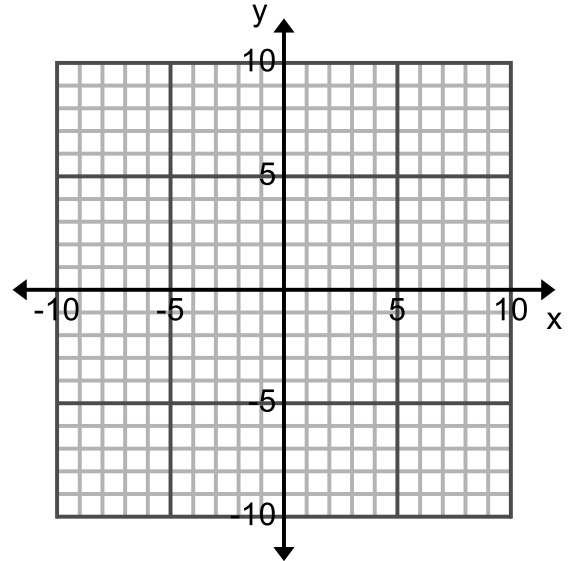   Rotation: $90°$ clockwise about the origin.
   Final Vertices:_____

7. $P(-9,-2)$, $Q(-9,-5)$, $R(-5,-4)$

   Translation: $(x,y) \rightarrow (x+14, y+1)$

   Translation: $(x,y) \rightarrow (x-3, y+8)$

   Final Vertices:_____
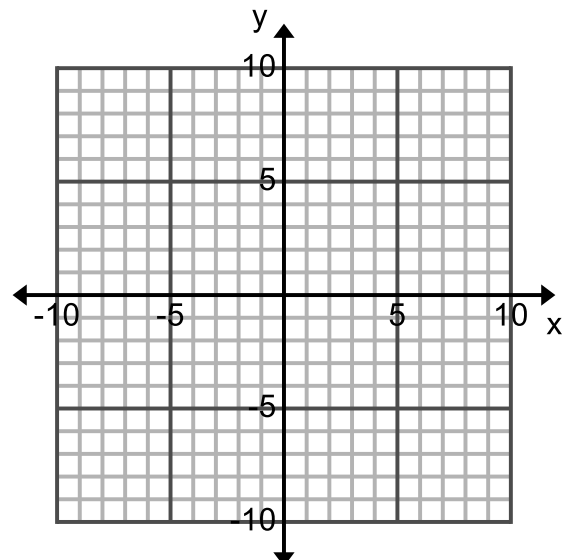
8. What single transformation could map $\triangle PQR$ to $\triangle P''Q''R''$? Identify the transformation and give the details.

6. $P(4,5)$, $Q(7,1)$, $R(8,8)$

   Translation: $(x,y) \rightarrow (x, y-7)$

   Reflection: across the y-axis

   Final Vertices:_____

9. $P(-7,2)$, $Q(-6,7)$, $R(-2,-1)$

   Reflection: about the line $x=-1$

   Rotation: $90°$ clockwise about the origin
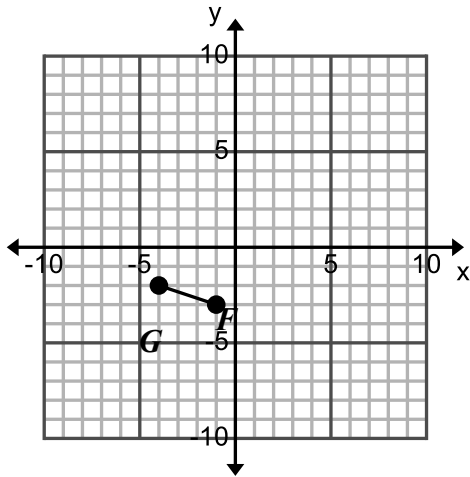   Final Vertices:_____

Graph and label the image of $\overline{FG}$ after a composition using the given transformation in the order they appear. Write the vertices of the final image.

10a. $F(-1,-3)$, $G(-4,-2)$

Reflection: in the y-axis

Translation: $(x,y) \rightarrow (x+2, y+10)$
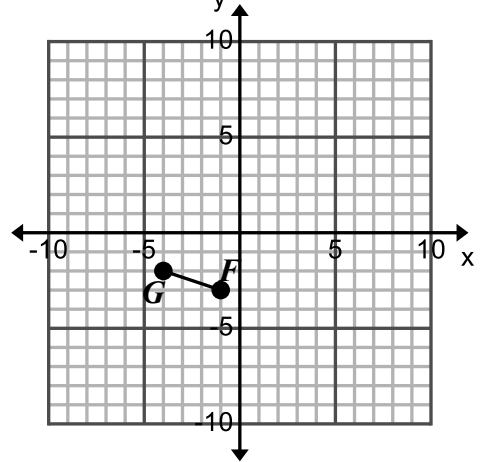
Final Vertices:_____

10b. $F(-1,-3)$, $G(-4,-2)$

Translation: $(x,y) \rightarrow (x+2, y+10)$

Reflection: in the y-axis

Final Vertices:_____

11. Comparing problems 10a and 10b, does the order in which you perform the transformation affect the final image?
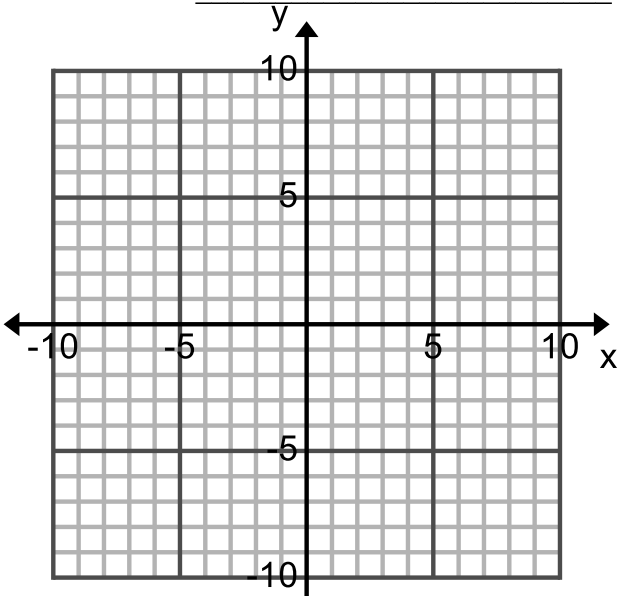
Graph and label $\triangle PQR$ and every image following the composition of transformations in the order they appear.

12. $P(3,-1)$, $Q(4,-6)$, $R(6,-7)$

Translation: $(x,y) \rightarrow (x-2, y+9)$

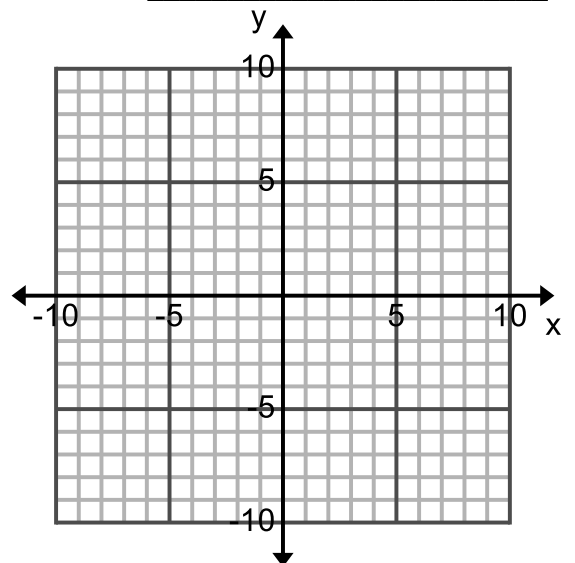Reflection: across the line $y = x$

Final Vertices:_____

13. $P(4,2)$, $Q(4,-2)$, $R(6,-4)$
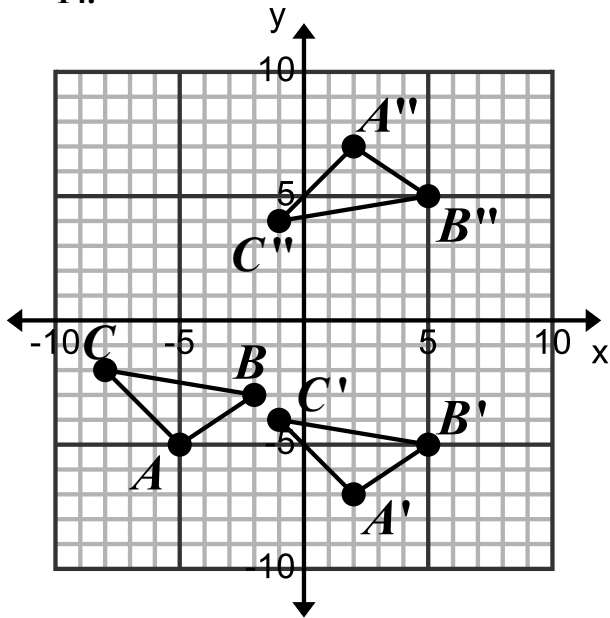
Reflection: across the y-axis

Reflection: across the x-axis

Final Vertices:_____

Identify the following composition of transformations.

14.

a. Identify what type of transformation occurred first and describe using the proper notation.
1st Transformation_____

Notation:_____

b. Identify what type of transformation occurred second and describe using the proper notation
2nd Trans: _____

Notation:_____

15.

a. Identify what type of transformation occurred first and describe using the proper notation.
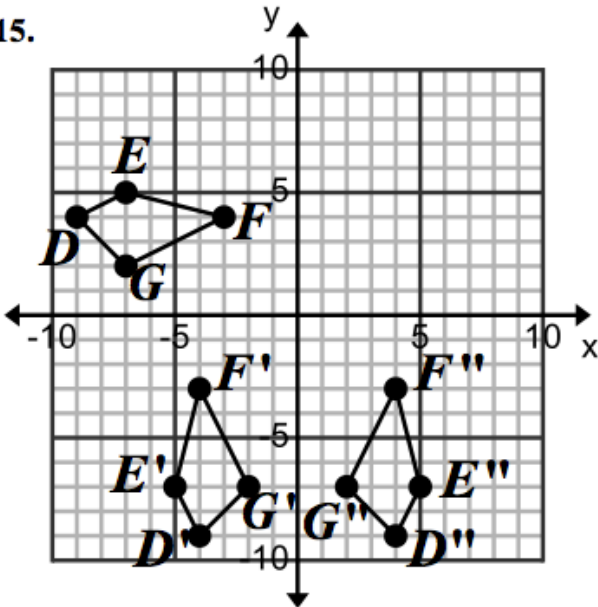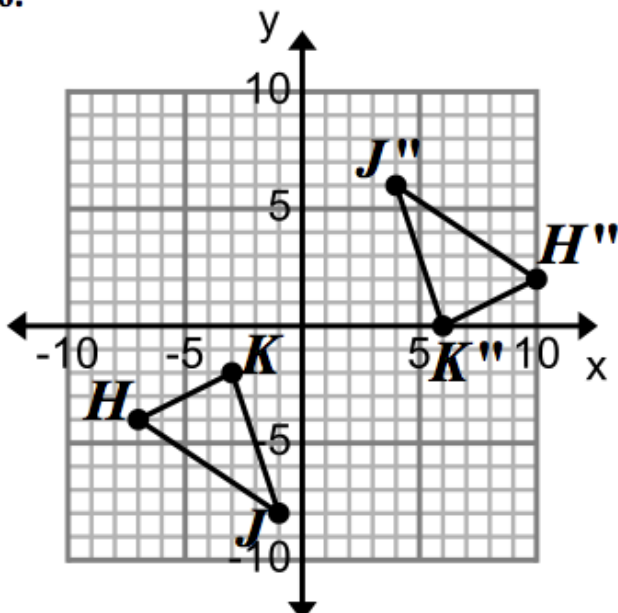1st Transformation_____

Notation:_____

b. Identify what type of transformation occurred second and describe using the proper notation
2nd Trans: _____

Notation:_____

16.

a. Identify what type of transformation occurred first and describe using the proper notation.
1st Transformation_____

Notation:_____

b. Identify what type of transformation occurred second and describe using the proper notation
2nd Trans: _____

Notation:_____