Name:_____ Period:_____ Date:_____

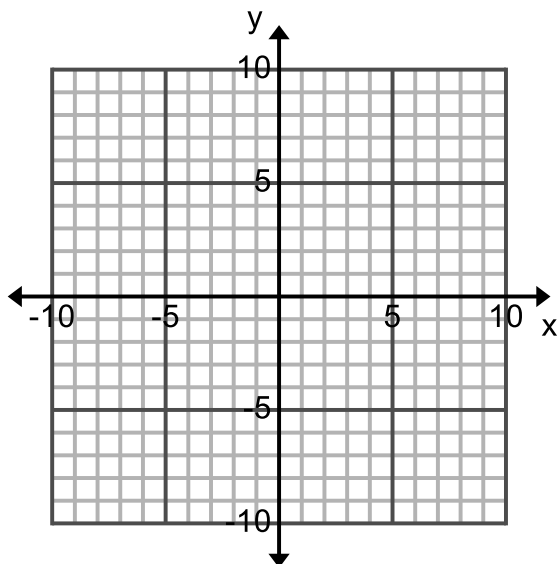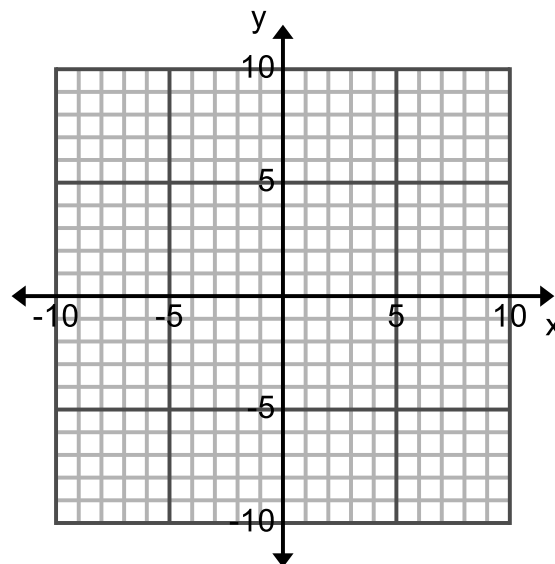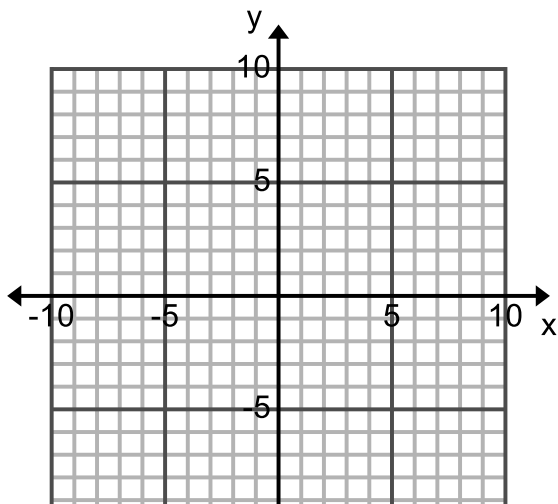**Determine if the two figures are congruent by using transformations.**

1.
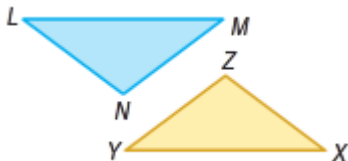
2.

Graph and label the image of $A(3,-5)$ after the described glide reflection. Write the final coordinates
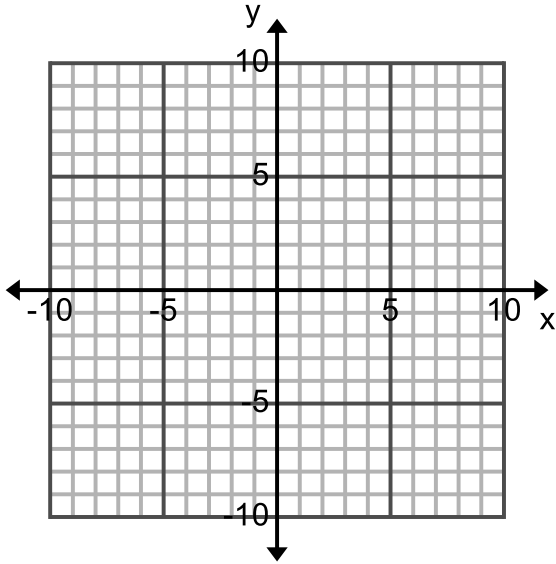
3. Translation: $(x,y) \rightarrow (x, y-4)$

   Reflection: across the y-axis

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

   Reflection: in the y-axis

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

   Reflection: about the x-axis

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

   Reflection: about the x-axis
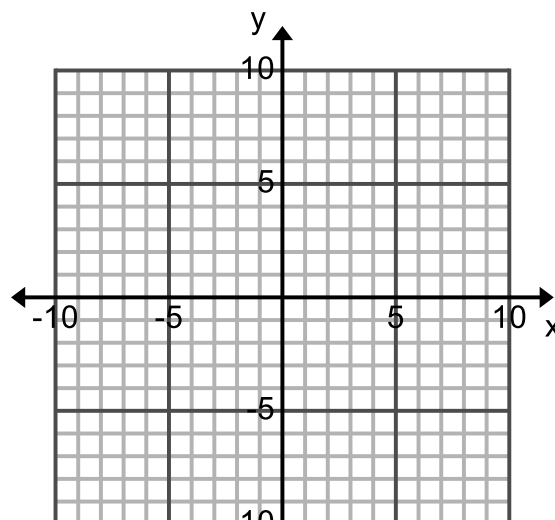
Graph and label $\triangle PQR$ **and every image following the composition of transformations in the order they appear. Write the coordinates of the final vertices.**

7. $P(4,2)$, $Q(7,0)$, $R(9,3)$
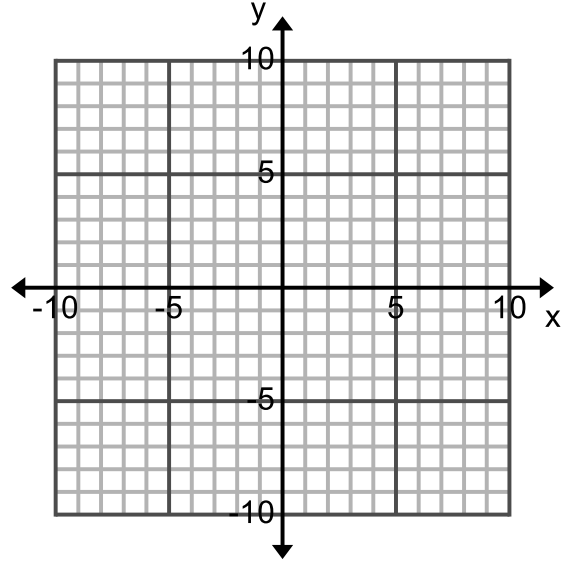
Translation: $(x,y) \rightarrow (x-2, y+3)$

Rotation: 90° clockwise about the origin.

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

Translation: $(x,y) \rightarrow (x, y-7)$
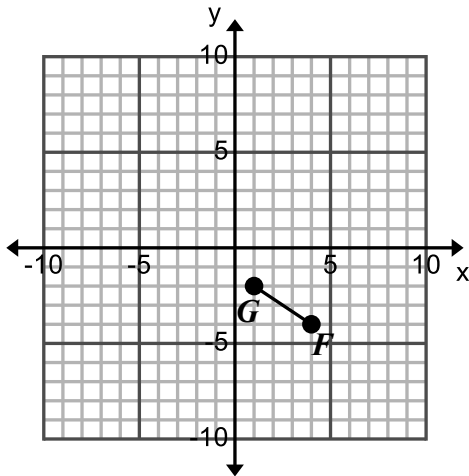
Reflection: across the y-axis

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

9. $F(4,-4)$, $G(1,-2)$

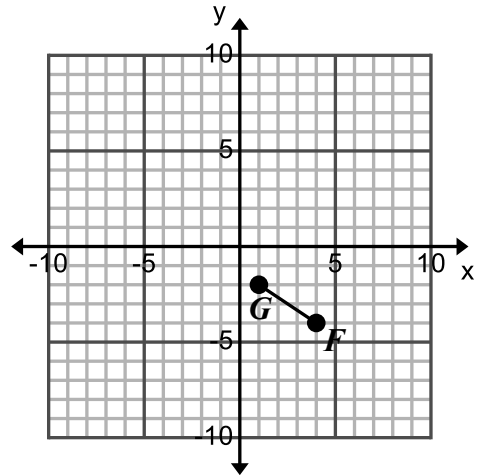Rotation: 90° clockwise about the origin
Reflection: across the y-axis

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

Reflection: across the y-axis
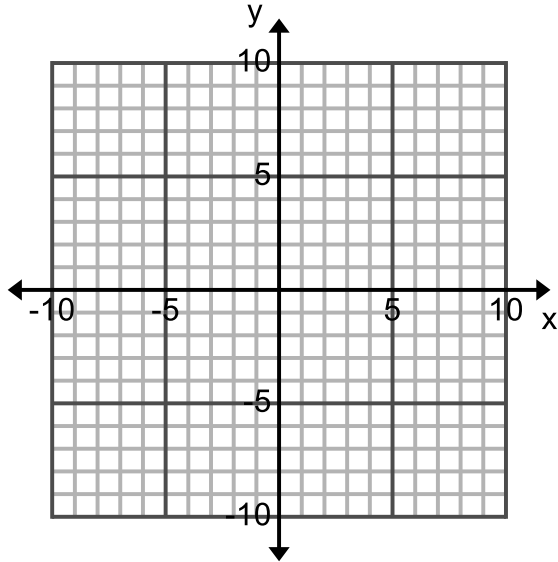Rotation: 90° clockwise about the origin

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

11. $P(-8,-3)$, $Q(-9,-6)$, $R(-5,-8)$
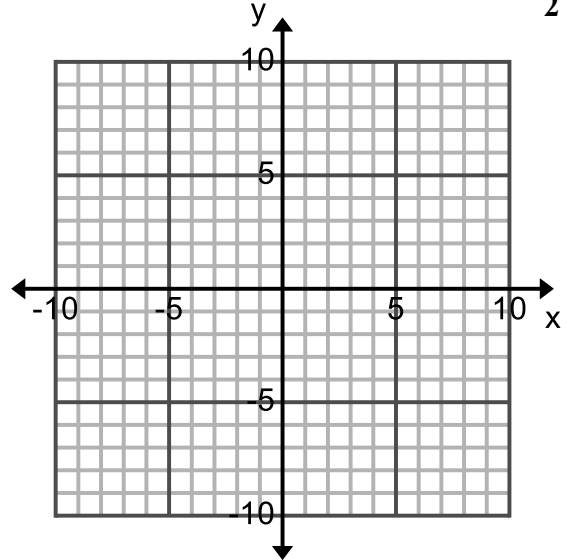
   Translation: $(x,y) \rightarrow (x+4, y+8)$

   Dilation: Center of dilation is the origin, $k = 2$
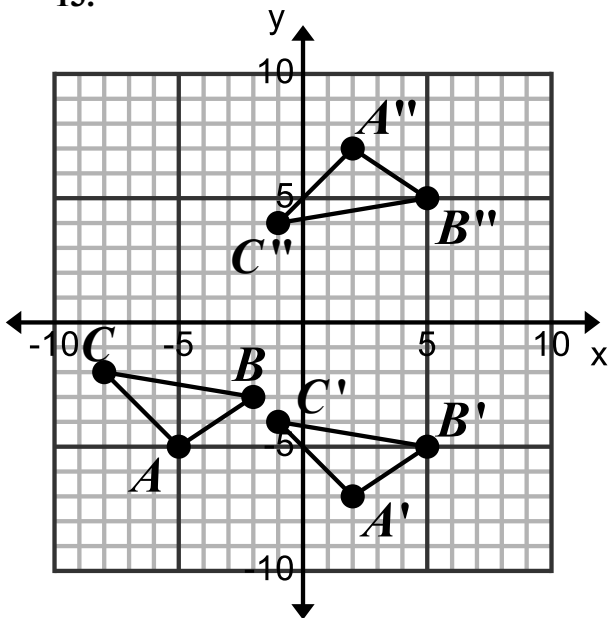
12. $P(4,2)$, $Q(4,-2)$, $R(6,-4)$

   Reflection: across the y-axis

   Dilation: Center of dilation is the origin, $k = \dfrac{1}{2}$

Identify the following composition of transformations.

13.

a. Identify the first transformation and give details.

   1st Trans:_____

   Details:_____

b. Identify the second transformation and give details
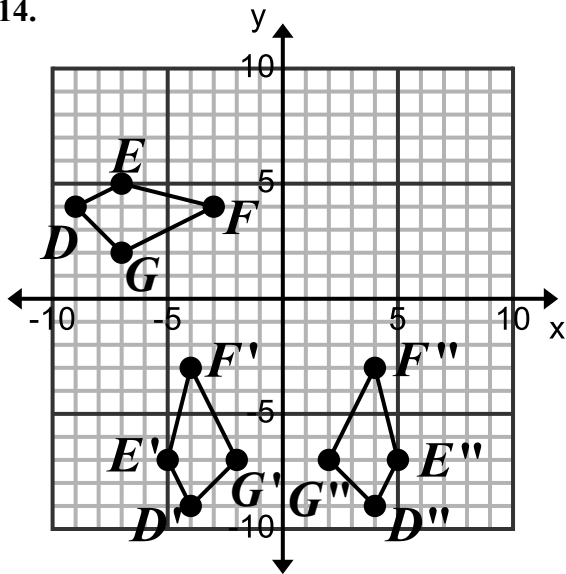
   2nd Trans: _____

   Details:_____

c. Is the final image congruent to the initial pre-image?

Identify the following composition of transformations.

14.

a. Identify the first transformation and give details
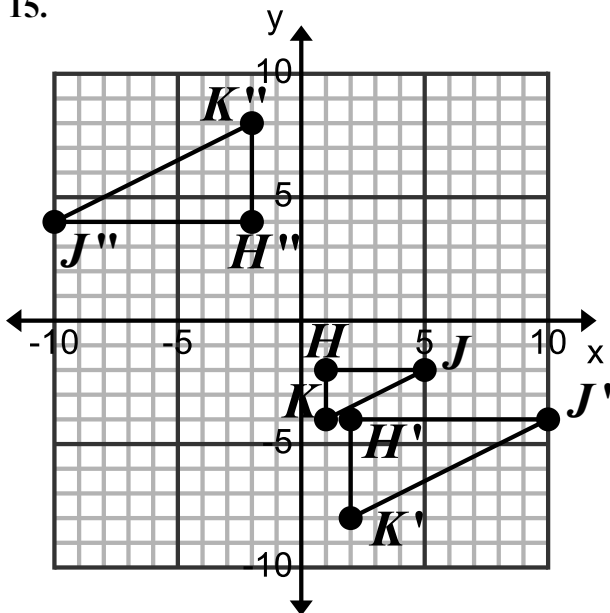
1ˢᵗ Trans:_____

Details:_____

b. Identify the second transformation and give details.

2ⁿᵈ Trans: _____

Details:_____

c. Was congruency maintained throughout all of the transformations?

15.

a. Identify the first transformation and give details

1ˢᵗ Trans:_____

Details:_____

b. Identify the second transformation and give details.

2ⁿᵈ Trans: _____

Details:_____

c. Is the final image congruent to the initial pre-image?

16.

Triangle *MNO* is congruent to triangle *RST*.

Which series of transformations maps △*MNO* onto △*RST*?

Ⓐ 90° clockwise rotation about *M* then a reflection

Ⓑ translation then a dilation

Ⓒ 90° clockwise rotation about *M* then a translation

Ⓓ reflection then a translation