Transformation Project

For this project, you will be creating a figure to transform on a coordinate plane.

Assignments:

1. Begin by drawing a figure (to be called your pre-Image) with at least 5 points but no more than 8 points. The figure should be creative, unique, and colored. It cannot be equilateral or block letters. Make sure to LABEL all the coordinate points with letters.
2. Copy your pre-Image on to each of the coordinate planes given (9 total, one for each transformation).
3. Complete the following transformations:
   a. Translate your pre-Image by $(x, y) \rightarrow (x + 3, y - 5)$
   b. Translate your pre-Image 4 units left and 1 unit down.
   c. Reflect your pre-Image across the y-axis.
   d. Reflect your pre-Image across the x-axis.
   e. Rotate your pre-Image 90° CCW
   f. Rotate your pre-Image 180° CCW
   g. Rotate your pre-Image 270° CCW
   h. Dilate your pre-Image by a scale factor of $\frac{3}{2}$
   i. Dilate your pre-Image by a scale factor of $\frac{1}{2}$
4. Complete the tables for your transformation coordinates.

DUE: March 17, 2017

What you will turn in:

- Pre-Image
- Show pre-image and coordinates copied on to every coordinate plane to teacher
- All graph paper with completed transformations and coordinate tables filled in
- Completed reflection questions

Rubric for how you will be graded:

Grades:

Pre-Image

- Between 5 and 8 coordinates located in the 1st Quadrant (10 points) _____
- Copied pre-image to all 9 coordinates for transformations (10 points) _____

Transformations

- Correct transformation a - coordinates and graph (6 points) _____
- Correct transformation b - coordinates and graph (6 points) _____
- Correct transformation c - coordinates and graph (6 points) _____
- Correct transformation d - coordinates and graph (6 points) _____
- Correct transformation e - coordinates and graph (6 points) _____
- Correct transformation f - coordinates and graph (6 points) _____
- Correct transformation g - coordinates and graph (6 points) _____
- Correct transformation h - coordinates and graph (6 points) _____
- Correct transformation i - coordinates and graph (6 points) _____

Reflection Questions

- Question #1 is answered thoroughly and insightfully (4 points) _____
- Question #2 is answered thoroughly and insightfully (4 points) _____
- Question #3 is answered thoroughly and insightfully (4 points) _____
- Question #4 is answered thoroughly and insightfully (4 points) _____

Other

- Neatness, clarity, and creativity (8 points) _____

Total Score = $\frac{_____}{100}$ =

Reflection Questions

1. Create a situation of when you could use either rotation, reflection, dilation, or translation in real life.

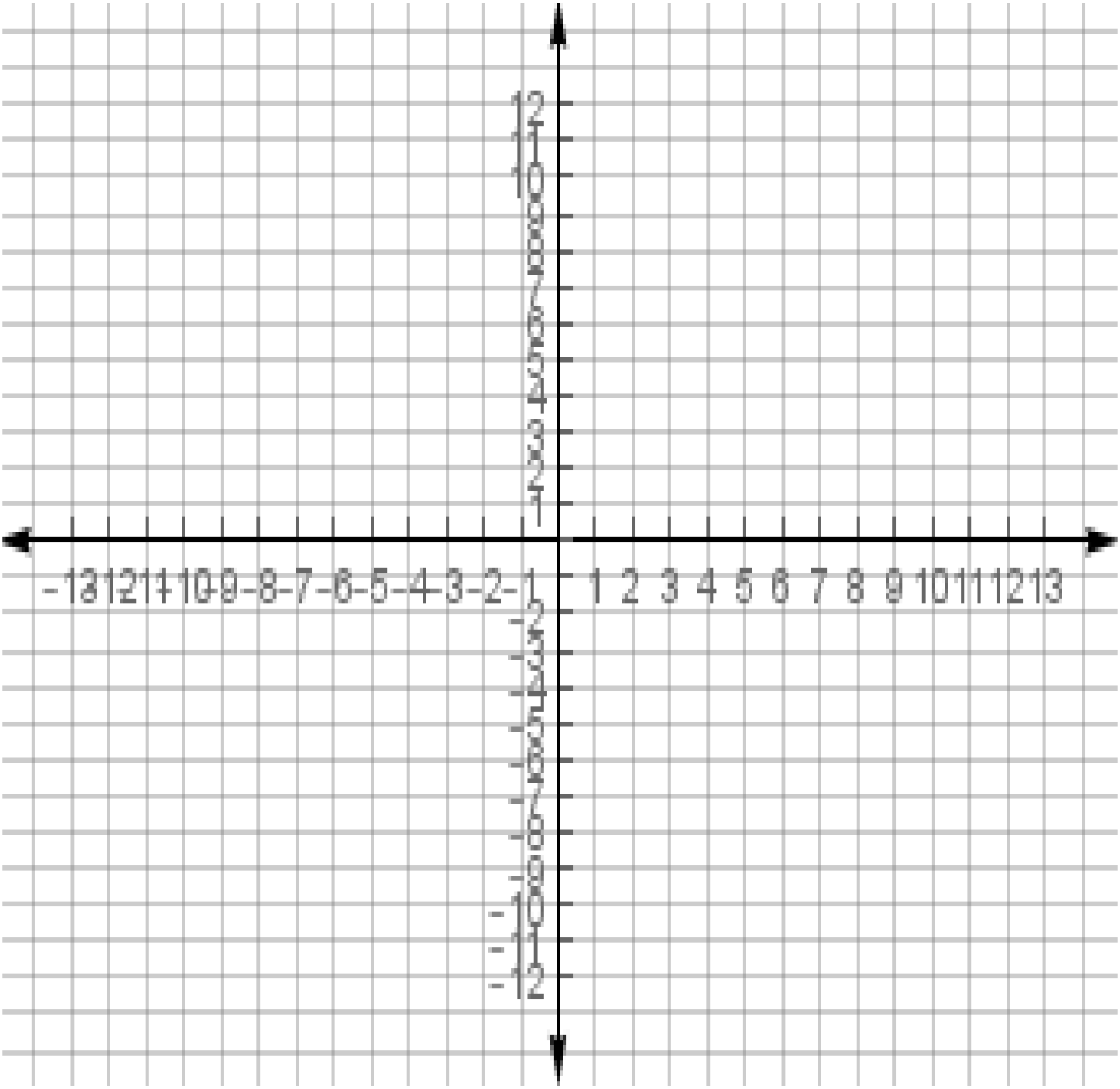
2. Compare translations and reflections. What's the same? What's different?

3. Consider rotating a figure 90° CCW, 180° CCW, and 270° CCW. If I were to rotate the same figure CW, list the rotations that result in the same transformed figure.

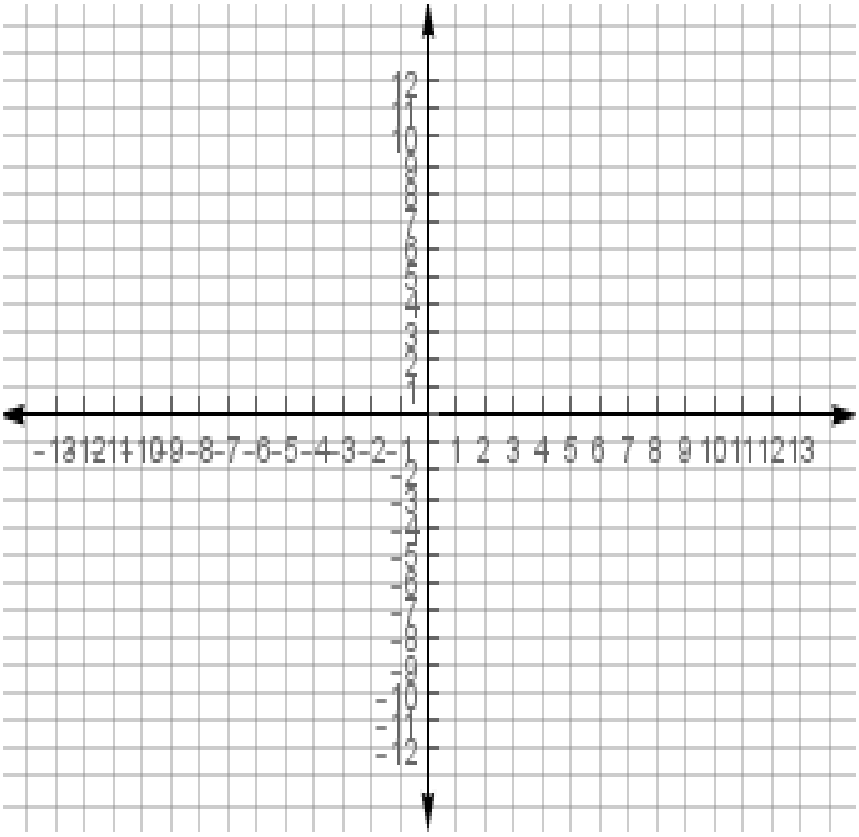
4. Write about 3 transformations that result in the same figure as the original figure.

Pre-image

- Must have at least 5 points, but no more than 8 points
- All points must be in Quadrant 1
- Be creative and color it
- Label all points with letters



a. Translate your pre-image using the rule $(x, y) \rightarrow (x + 3, y - 5)$



Pre-image	Translated $(x, y) \rightarrow (x + 3, y - 5)$

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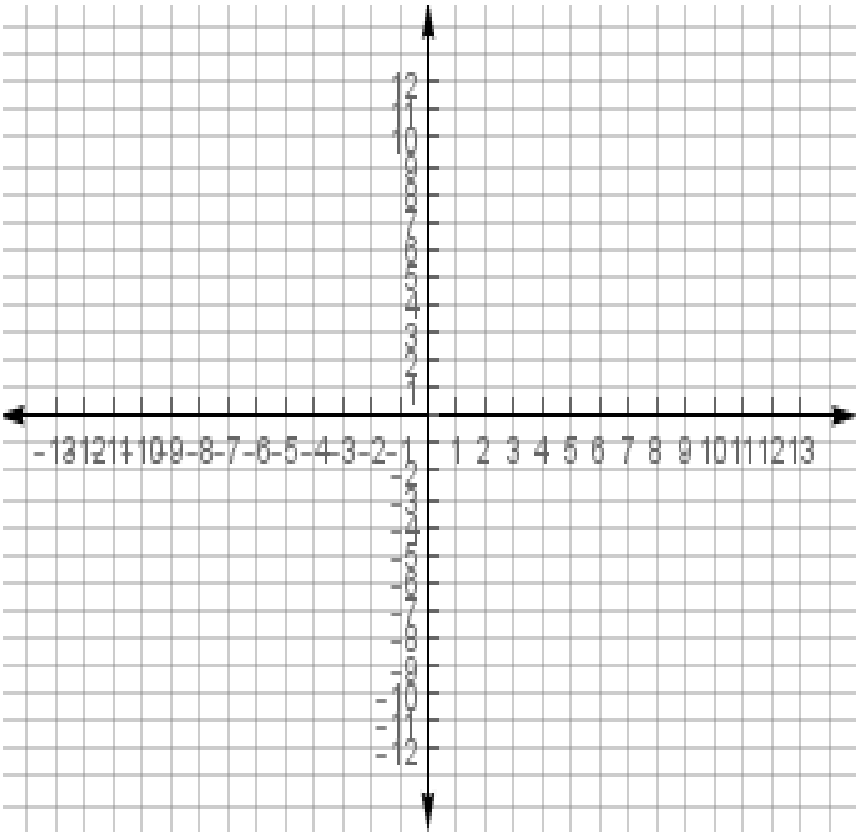
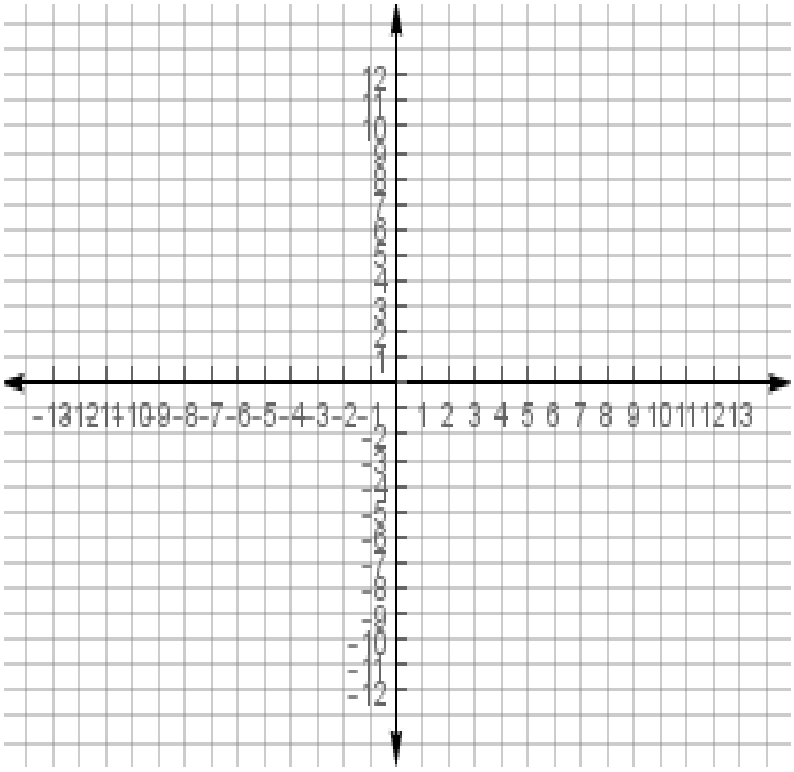
b. Translate your pre-image 4 units to the left and 1 unit up.



Pre-image	Translated 4 units left and 1 unit up

c. Reflect your pre-image across the y-axis



Pre-image	Reflected across y-axis

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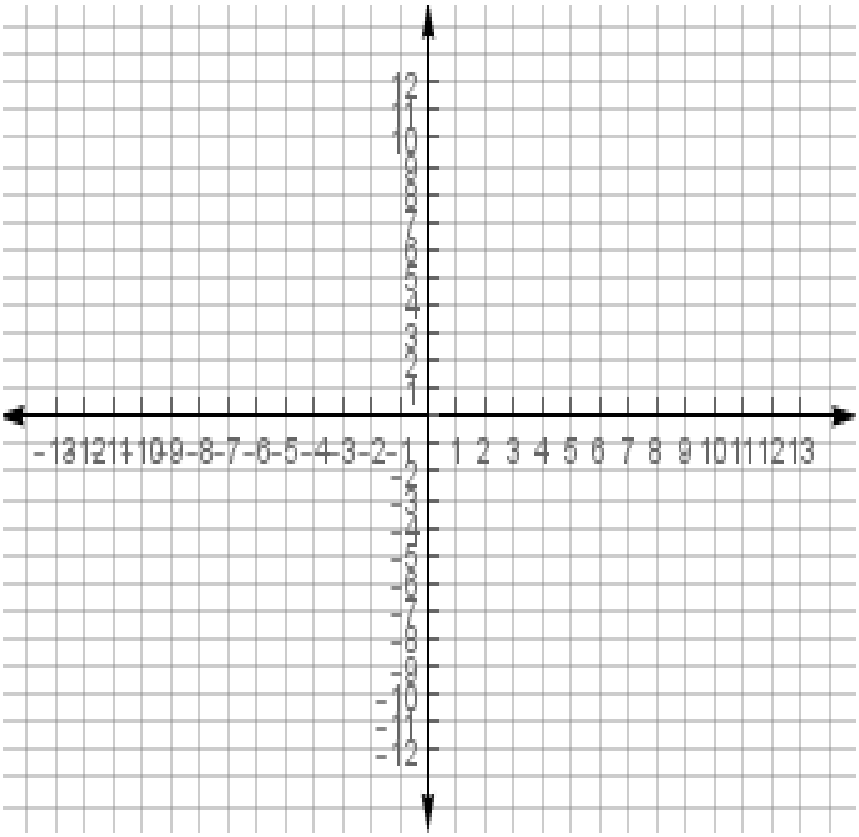
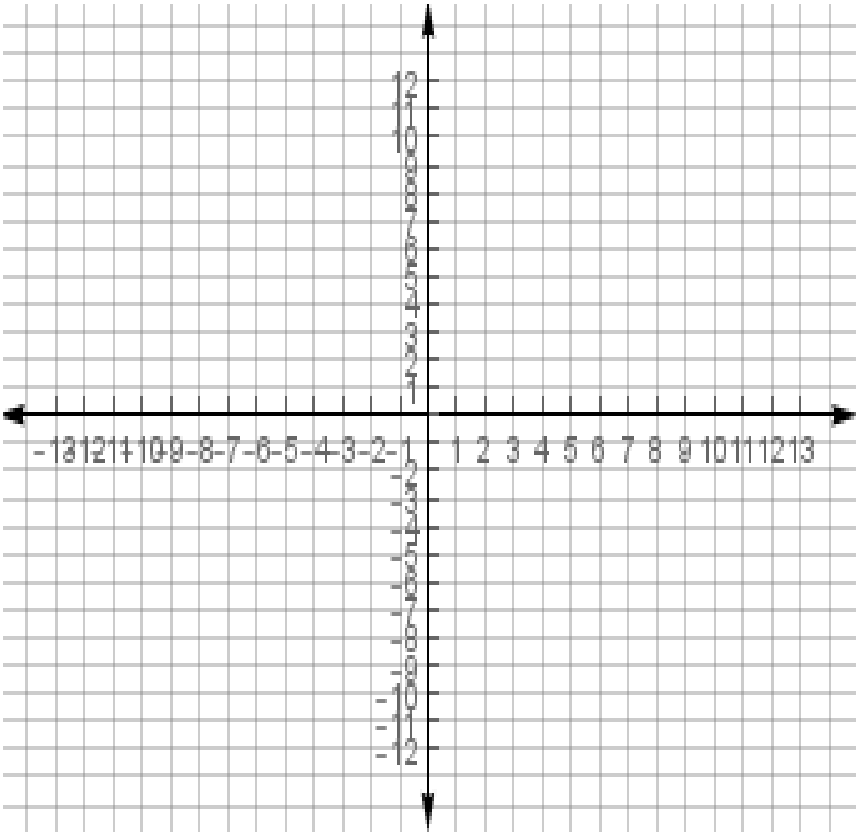
d. Reflect your pre-image across the x-axis



Pre-image	Reflected across x-axis

e. Rotate your pre-image 90° CCW



Pre-image	Rotated 90° CCW

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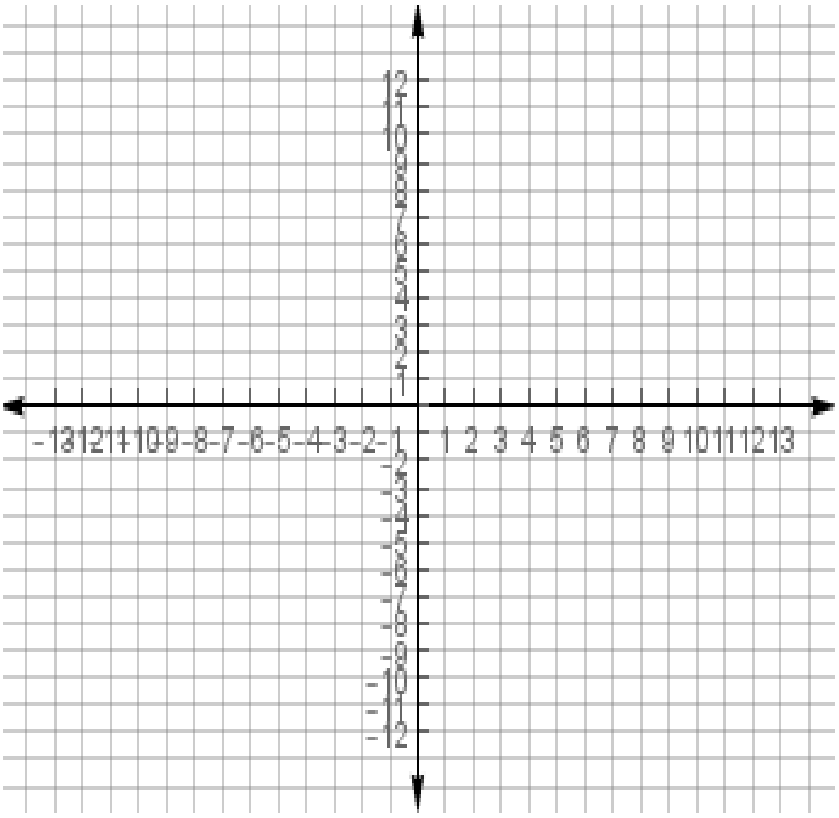
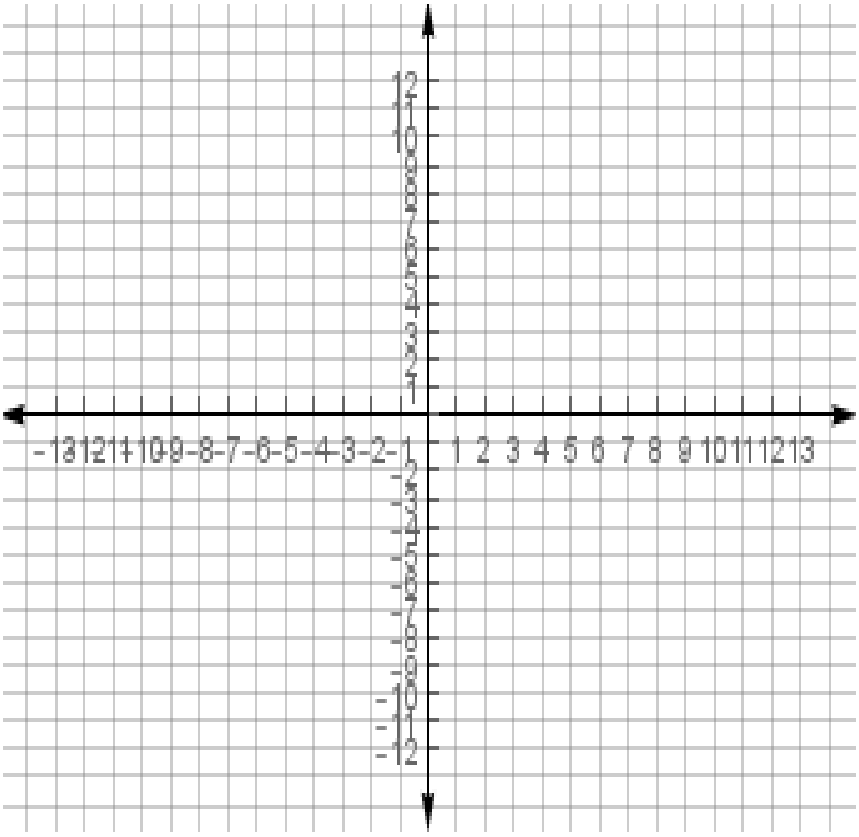
f. Rotate your pre-Image 180° CCW



Pre-image	Rotated 180° CCW

g. Rotate your pre-Image 270° CCW



Pre-image	Rotated 270° CCW

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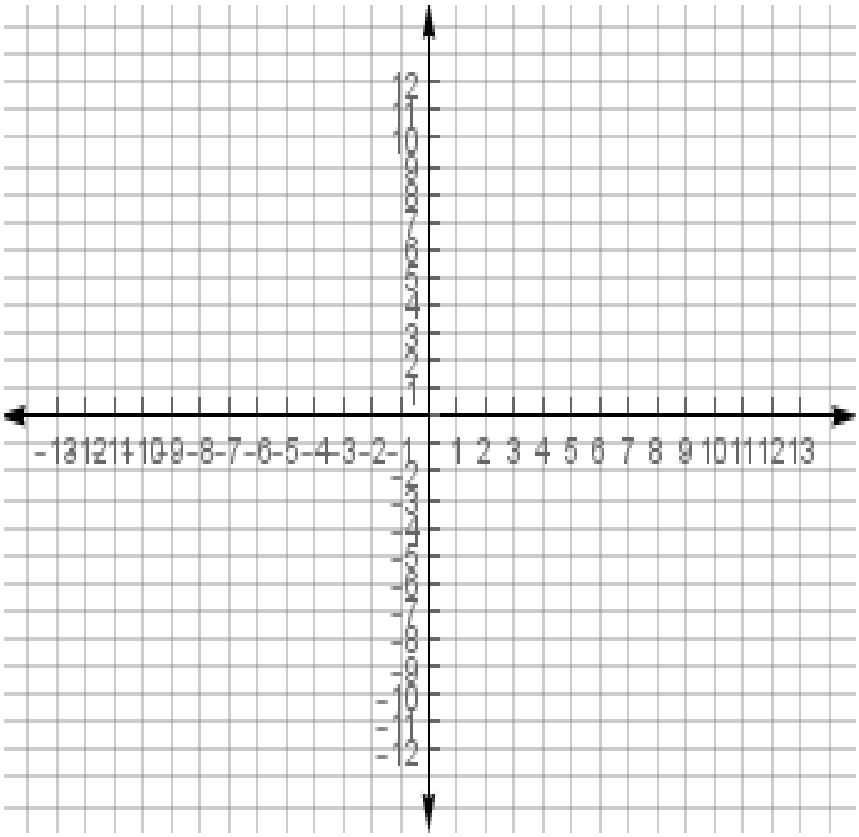
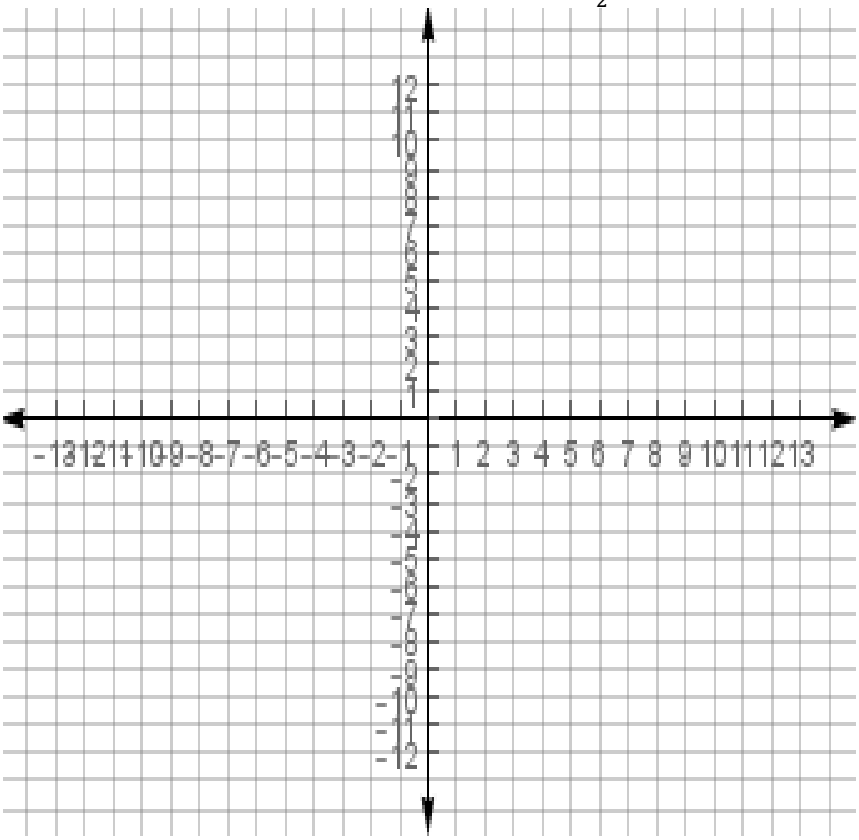
h. Dilate your pre-image by a scale factor of $\frac{3}{2}$



Pre-image	Dilated by $\frac{3}{2}$

i. Dilate your pre-image by a scale factor of $\frac{1}{2}$



Pre-image	Dilated by $\frac{1}{2}$