8/24 In-Class Investigation on Ordered Pair Rules, due 8/26

You started working on this in class today and your job is to finish it for homework.

INVESTIGATION

Ordered Pair Rules

So far you have seen in the previous examples that:
- The ordered pair rule $(x, y) \rightarrow (x + h, y + k)$ is a translation transformation by the vector $<h, k>$.
- The ordered pair rule $(x, y) \rightarrow (x, -y)$ is a reflection transformation across the x-axis.
- The ordered pair rule $(x, y) \rightarrow (y, -x)$ is a 90° clockwise rotation transformation about the origin.

In this investigation you will discover the transformations created by the following ordered pair rules:
- The ordered pair rule $(x, y) \rightarrow (-x, y)$.
- The ordered pair rule $(x, y) \rightarrow (-x, -y)$.
- The ordered pair rule $(x, y) \rightarrow (y, x)$.
- The ordered pair rule $(x, y) \rightarrow (-y, x)$.
- The ordered pair rule $(x, y) \rightarrow (-y, -x)$.

Step 1

On graph paper, create and label five sets of coordinate axes. Draw the same polygon in the same position in the same quadrant of each of the five graphs and write one of the above ordered pair rules below each graph.
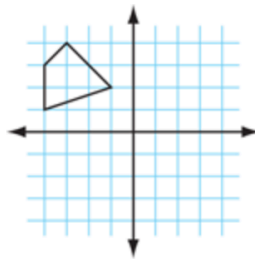
Step 2

Use the ordered pair rule you assigned to each graph to relocate the vertices of your polygon and create its image.

Step 4:

Fill in the blanks below about what type of transformation matches with each ordered pair rule. Be as specific as possible (not just *reflection* or *rotation*). If, for example, it is a reflection, identify the line of reflection. If it is a rotation, identify the center of rotation and the number of degrees in the clockwise rotation.

The ordered pair rule (x, y) ➜ (-x, y) is a

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The ordered pair rule (x, y) ➜ (-x, -y) is a

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The ordered pair rule (x, y) ➜ (y, x) is a

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The ordered pair rule (x, y) ➜ (-y, x) is a

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The ordered pair rule (x, y) ➜ (-y, -x) is a

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