Transformation Graphing Project

Draw transformations of figures in the coordinate plane.

You are going to create a design or drawing that will be translated, reflected, and rotated around the coordinate plane.

**Step 1: Create your original drawing**
The following rules apply when creating your drawing:
- It must fit within a 10 x 12 rectangle (second quadrant of graph paper)
- It must NOT be symmetrical
- It must have sufficient detail. (Be creative!)
- The drawing must have corners at the points on the coordinate plane. Diagonals are allowed, there just must be some things that you will be able to use to do your transformations
- The drawing must be neat and use straight lines when necessary (curved lines are appropriate in certain situations when your design needs them)
- If your drawing has a specific up and down, it should start off facing up

**Step 2: Composition of Transformations #1**
- Start with your original drawing in one of the quadrants.
- Write a composition of transformations that will move your pre-image to each of the other quadrants.
- You must use **at least** 1 rotation, 1 reflection, and 1 translation.
- Your transformations do not have to be to similar places, they can be all over the coordinate plane as long as they are within the 3 other quadrants.
- When you finish drawing the transformations of your figure, each transformation and the original should be colored the same.
- Make sure to label all vertices.

- Record your transformations here:
  Transformation #1: ____________________________________________________________

  Transformation #2: ____________________________________________________________

  Transformation #3: ____________________________________________________________

- Write a **single** rule for your composition of transformations:
  
  **Rule:** ________________________________________
Step 3: Composition of Transformations #2

✓ Start with your original drawing in one of the quadrants. (This should be the same pre-image as in Step 2 but you can start in a different quadrant if you choose.)

✓ Write a composition of transformations that will move your pre-image to each of the other quadrants.

✓ You must use at least 1 rotation, 1 reflection, and 1 translation. The rotation needs to be about a point other than the origin and the reflection needs to be over a line that is not the x- or y- axis.

✓ Your transformations do not have to be to similar places, they can be all over the coordinate plane as long as they are within the 3 other quadrants.

✓ When you finish drawing the transformations of your figure, each transformation and the original should be colored the same.

✓ Make sure to label all vertices.

✓ Record your transformations here:

  Transformation #1: _______________________________________________________________

  Transformation #2: _______________________________________________________________

  Transformation #3: _______________________________________________________________

✓ Write a single rule for your composition of transformations:

  Rule: ________________________________________________________________
Grading Rubric

Draw transformations of figures in the coordinate plane.

<table>
<thead>
<tr>
<th>Original</th>
<th>3</th>
<th>2 - Some mistakes or omissions from the 3.0 requirements</th>
<th>1 - Many mistakes or omissions from the 3.0 requirements</th>
<th>0 – Did not satisfy requirements in any way</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT symmetrical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient detail</td>
<td></td>
<td></td>
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<tr>
<td>Corners at the points on the coordinate plane</td>
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</tr>
<tr>
<td>Neat and straight lines used when necessary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Composition of Transformations #1**
- All three transformations recorded
- Single Rule recorded and correct
- First transformation correct
- Second transformation correct
- Third transformation correct
- Translations into all 3 other quadrants
- Used at least 1 rotation
- Used at least 1 reflection
- Used at least 1 translation
- Neatly drawn; all images colored the same

**Composition of Transformations #2**
- All three transformations recorded
- Single Rule recorded and correct
- First transformation correct
- Second transformation correct
- Third transformation correct
- Translations into all 3 other quadrants
- Used at least 1 rotation about a point other than the origin
- Used at least 1 reflection not over the x-axis or y-axis
- Used at least 1 translation
- Neatly drawn; all images colored the same

Overall project score: __________/72