

Honors Math 2 Unit 2 Transformations Review

For each problem, you will complete the following parts:

- I) Graph and label pre-image on graph paper.
 - II) Write the algebraic rule or transformation description (whichever is missing in the problem)
 - III) Graph and label the image on the same graph. Also, mark the image with the problem letter (a, b, etc.)
 - IV) Write coordinates of the image on the side of the graph. Label appropriately.
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1) Translations **G (1, 3)** **E (-1, 1)** **O (4, -3)**

Task: Perform the following translations of triangle GEO on the same graph.

- a) Translate triangle GEO left 2, up 1
 - b) Transform triangle GEO according to the rule $(x, y) \rightarrow (x + 1, y - 3)$
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2) Reflections **G (1, 3)** **E (-1, 1)** **O (4, -3)**

Task: Perform the following reflections of triangle GEO on the same graph.

- a) Reflect triangle GEO over the x-axis
 - b) Transform triangle GEO according to the rule $(x, y) \rightarrow (-y, -x)$
 - c) Reflect triangle GEO over the line $y = -x$
 - d) Transform triangle GEO according to the rule $(x, y) \rightarrow (-x, y)$
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3) Rotations **G (1, 3)** **E (-1, 1)** **O (4, -3)**

Task: Perform the following rotations of triangle GEO on the same graph.

- a) Rotate triangle GEO 90 degrees
- b) Rotate triangle GEO 90 degrees clockwise
- c) Transform triangle GEO according to the rule $(x, y) \rightarrow (-x, -y)$

7) Matching (Match the description with the algebraic rule.)

1. Translation	A. $(x, y) \rightarrow (y, x)$
2. Reflection over x-axis	B. $(x, y) \rightarrow (-y, x)$
3. Reflection over y-axis	C. $(x, y) \rightarrow (ax, ay)$
4. Reflection over $y = x$	D. $(x, y) \rightarrow (x, -y)$
5. Reflection over $y = -x$	E. $(x, y) \rightarrow (-y, -x)$
6. Rotation 90 degrees counter-clockwise	F. $(x, y) \rightarrow (x + a, y + b)$
7. Rotation 90 degrees clockwise	G. $(x, y) \rightarrow (-x, -y)$
8. Rotation 180 degrees (clockwise or counter-clockwise)	H. $(x, y) \rightarrow (y, -x)$
9. Dilation	I. $(x, y) \rightarrow (-x, y)$