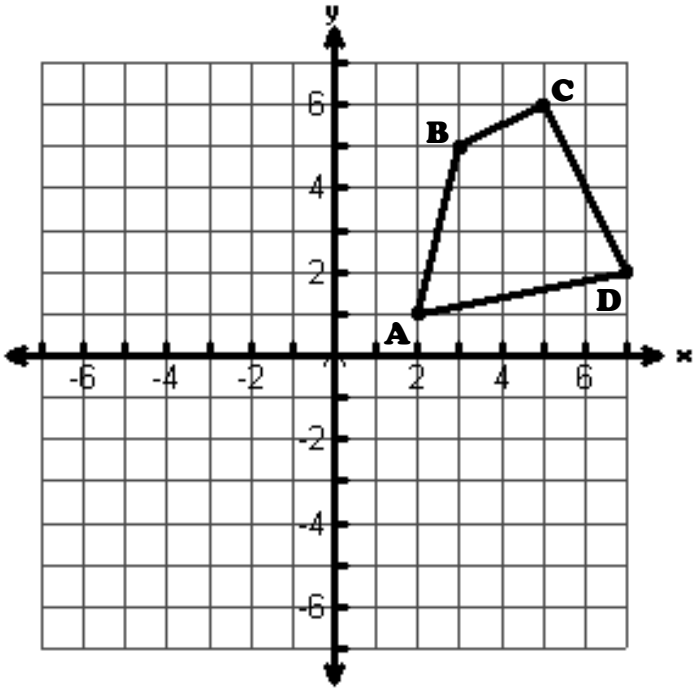
Transformations Rules and Applications Homework Name _____

Find the coordinates of the vertices of the image of *ABCD* for each transformation.



1. Translation: $(x, y) \rightarrow (x-6, y+8)$

2. Rotation of 90° about the origin

3. Reflection across the line $x = -4$

4. Dilation centered at the origin with a scale factor of $\frac{2}{3}$

5. Reflection across the line $y = -x$

6. Rotation of -90° about the origin

7. Dilation centered at the origin with a scale factor of 5

8. Translation 3 units right and 1 unit down

9. Triangle *ABC* has vertices *A*(1, 3), *B*(0, 1), and *C*(4, 0). Under a translation, *A'*, the image of *A*, is located at (4, 4). Under this same translation, where would point *C'* be located?

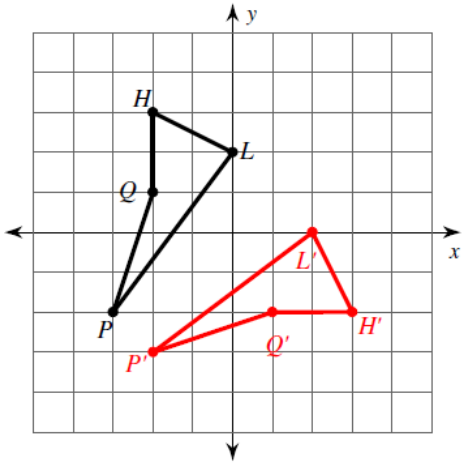
10. A translation maps (17, 8) onto (9, -1). Under the same translation, what is the **preimage** of (10, 2)?

11. Find a single translation that has the same effect as each composition of translations.

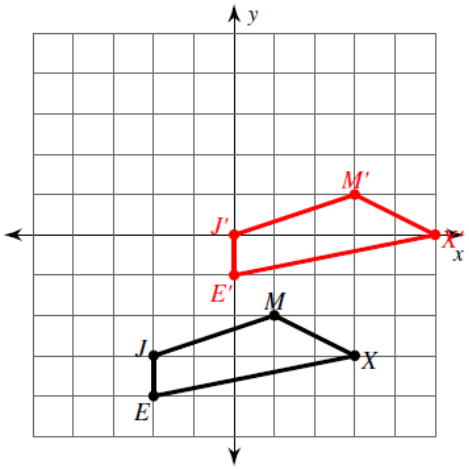
$(x, y) \rightarrow (x+2, y+5)$ followed by $(x, y) \rightarrow (x-4, y+9)$

Write a rule to describe each transformation.

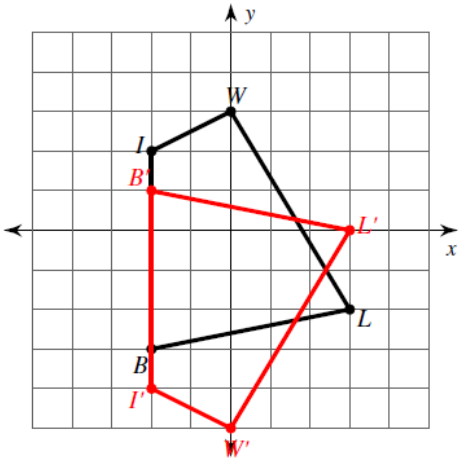
12.



13.



14.



15.