Geometry
Homework – Multiple Transformations

Name: Key

Using the pre-image point (5, -8), follow the transformations below. Start back at the pre-image for each number. Use your rules!!!

1. Reflection over the x-axis: (5, 8)
   $(x, -y)$

2. Translation vector $\langle -4, -12 \rangle$: (1, -20)
   $(5-4, -8-(2))$

3. Dilation with a scale factor of ½: (2.5, -4)
   $(\frac{1}{2}(5), \frac{1}{2}(-8))$

4. Rotation of 90 degrees CCW: (8, 5)
   $(-y, x)$

5. Translation of $\langle 3, -1 \rangle$ → then Reflection over the y-axis: (-8, -9)
   $(8, -9)$ $(-x, y)$

6. Rotation of 180 degrees → then Dilation of 3: (-15, 24)
   $(-x, -y)$ $(-5, 8)$

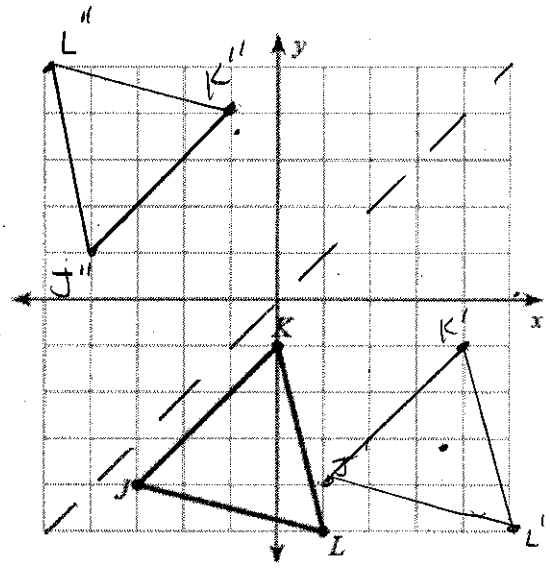
Graph the following compound transformations.

7. a. Translation $\langle 4, 0 \rangle$

   K'(4, -1) L'(5, -5) J'(1, -4)

   b. Reflection over the line y = x (y, x)

   K"(-1, 4) L"(-5, 5) J"(-4, 1)



8. a. Rotate 90 degrees CCW $(-y, x)$

   Q'(1, 1) R'(-3, 4) S'(0, 4)

   b. Reflection over the line y = 1

   Q"(1, 1) R"(-3, 2) S"(0, -2)