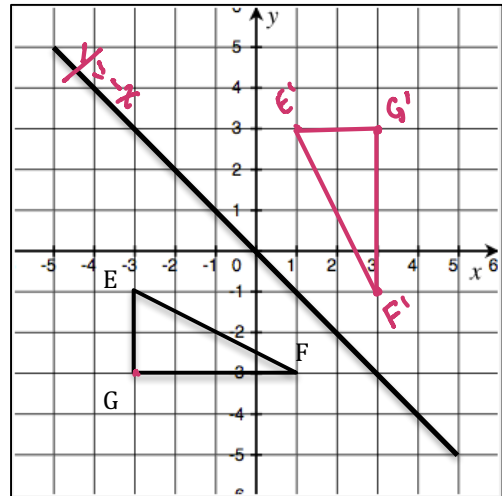
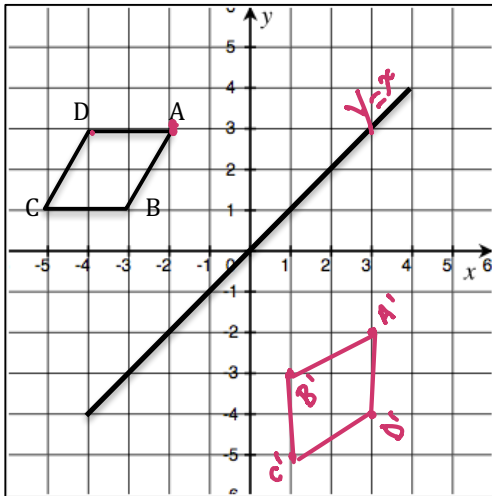


**LEARNING OBJECTIVE:** We will perform a sequence of reflections and translations and sequences of rotations. (G8M2L5)

**ACTIVATING PRIOR KNOWLEDGE:**

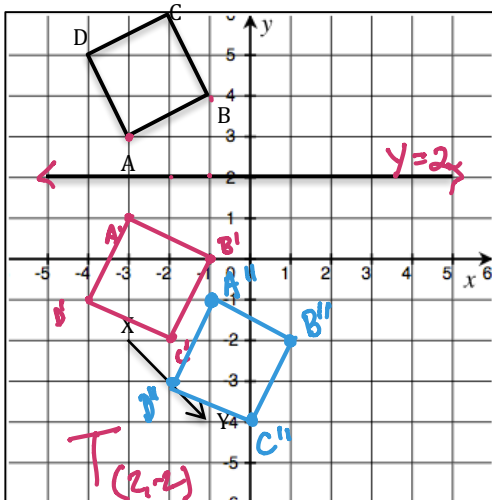
We can reflect objects around a line of reflection:



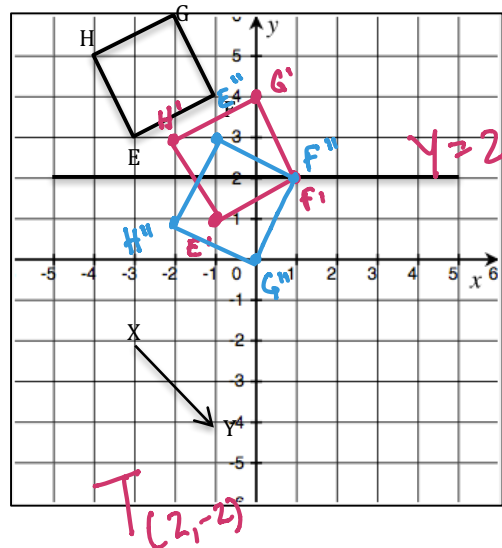
**CONCEPT DEVELOPMENT:**

- Does the order of the sequence of rigid motions matter?
  - YES! When you're talking about reflections and translations.
  - NO! Not when we're talking about two or more translations (we saw that in the last lesson).

**Reflect first, then Translate**



**Translate First, then Reflect**

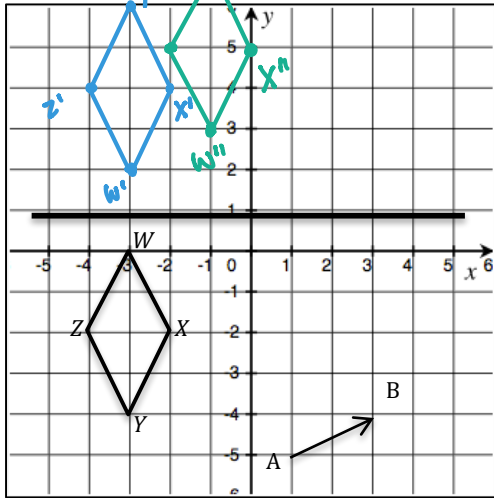


**GUIDED PRACTICE:**

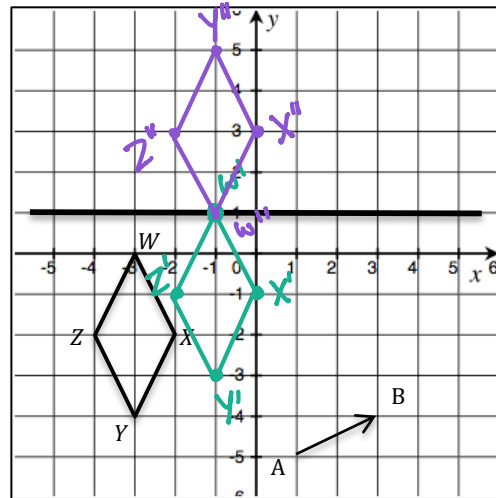
**Steps for Sequencing Translations and Reflections**

1. Read the instructions and perform your first transformation.
2. Perform your second transformation.
3. Label your points.

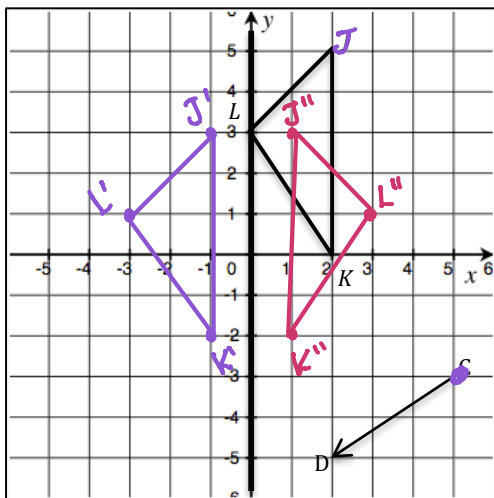
Reflect across line  $y = 1$ , then translate along  $\overrightarrow{AB}$ .



Translate along  $\overrightarrow{AB}$  and then reflect across the line  $y = 1$ .

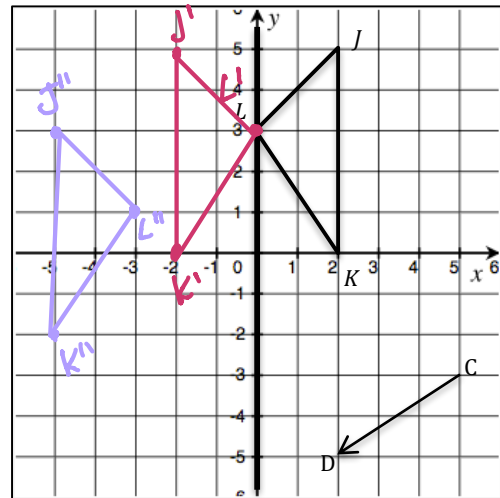


Translate along  $\overrightarrow{CD}$  and then reflect across y-axis.



$T(-3, -2)$

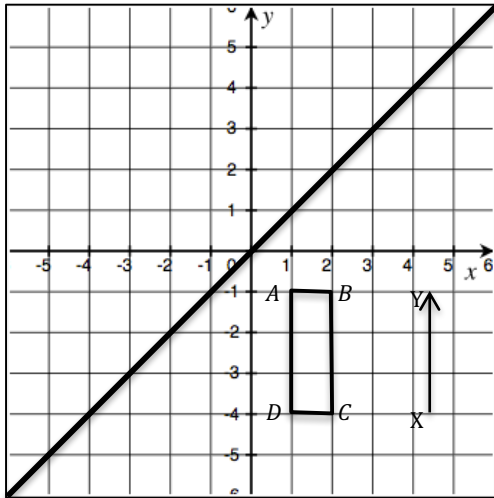
Reflect across y-axis and then translate along  $\overrightarrow{CD}$ .



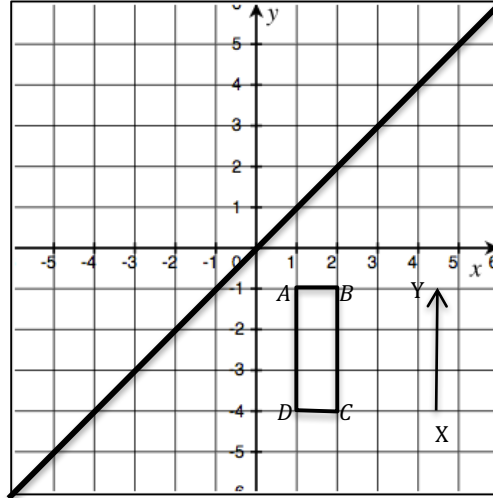
**Steps for Sequencing Translations and Reflections**

1. Read the instructions and perform your first transformation.
2. Perform your second transformation.
3. Label your points.

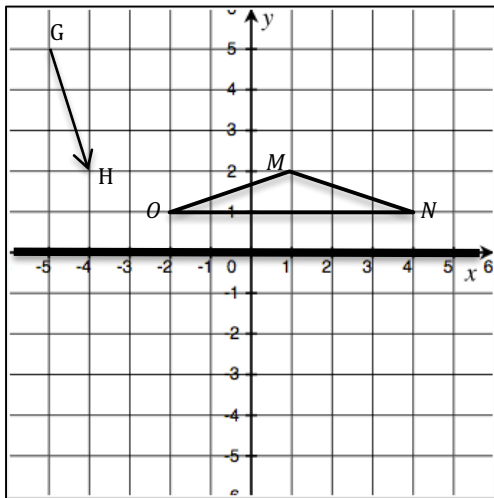
Reflect across the line  $y = x$ , then translate along  $\overrightarrow{XY}$ .



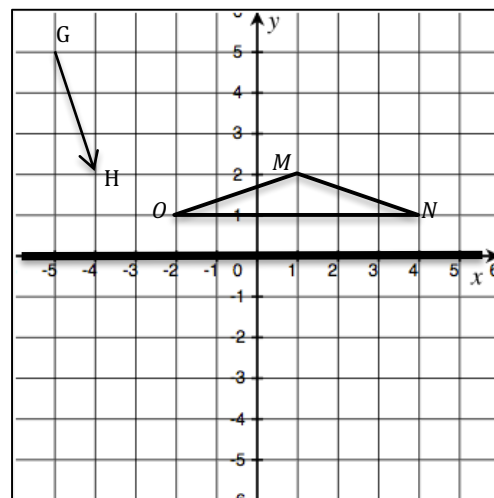
Translate along  $\overrightarrow{XY}$ , then reflect across the line  $y = x$ .



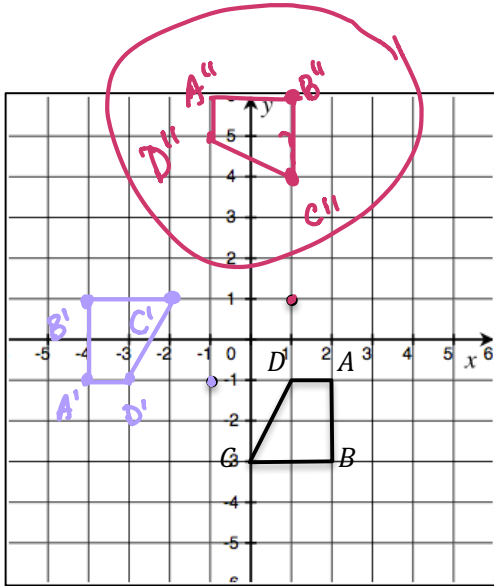
Translate along  $\overrightarrow{GH}$ , then reflect over the  $x$ -axis.



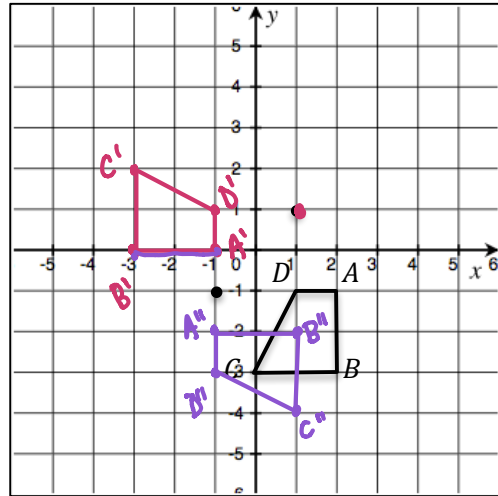
Reflect over the  $x$ -axis, then translate along  $\overrightarrow{GH}$ .



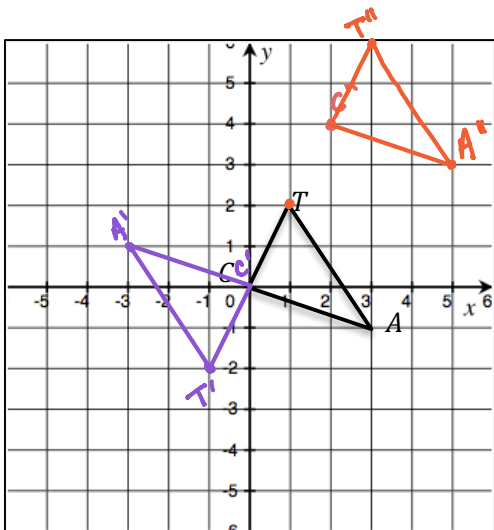
Rotate the shape 180 degrees around  $(-1, -1)$  and then 90 degrees clockwise around  $(1, 1)$ .



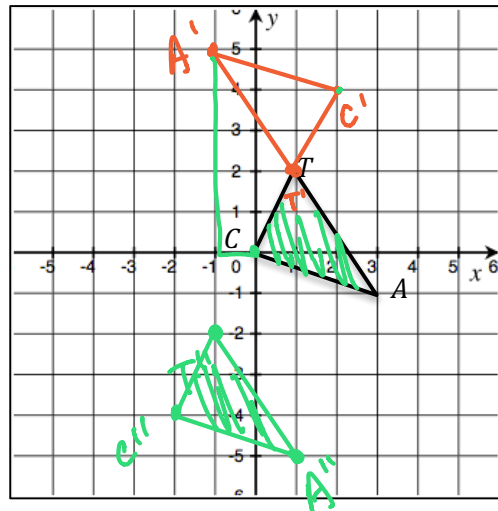
Rotate the shape 90 degrees clockwise around  $(1, 1)$  and then rotate 180 degrees around  $(-1, -1)$ .



Rotate the triangle 180 degrees around the origin, and then rotate 180 degrees around  $(1, 2)$ .



Rotate the triangle 180 degrees around  $(1, 2)$ , and then rotate 180 degrees around the origin.



NAME: \_\_\_\_\_

Math 7.1, Period \_\_\_\_\_

Mr. Rogove

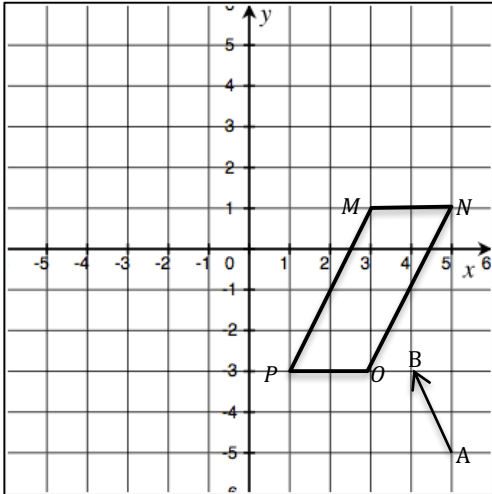
Date: \_\_\_\_\_

**INDEPENDENT PRACTICE:**

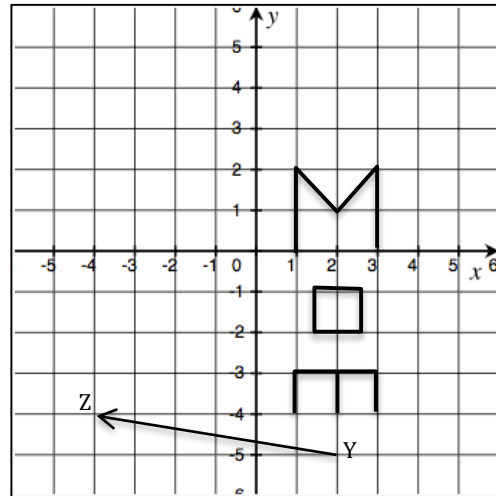
**Steps for Sequencing Transformations and Reflections**

1. Read the instructions and perform your first transformation.
2. Perform your second transformation.
3. Label your points.

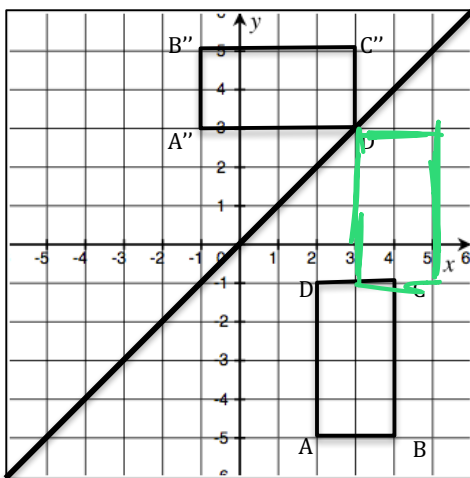
Reflect across line  $y = x$ , and then translate along  $\vec{AB}$ .



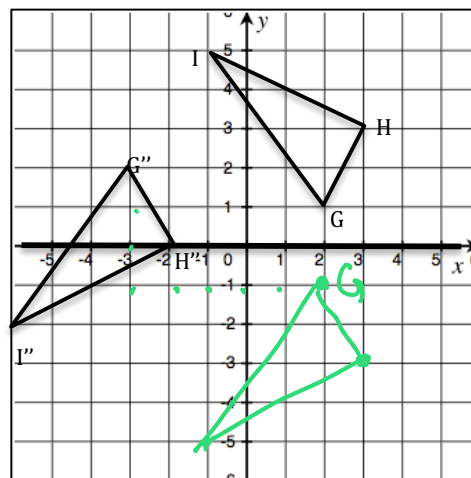
Translate along  $\vec{YZ}$ , then reflect over the line  $x = -3$ .



Determine the order of the sequence of transformations, and write the translation along a vector, and draw rectangle  $A'B'C'D'$ .



Determine the order of the sequence of transformations, and write the translation along a vector, and draw triangle  $G'H'I'$ .



- ①  $T_{(1,4)}$
- ② Reflected  $y=x$

- ① Reflect  $y=0$
- ②  $T_{(-5,3)}$