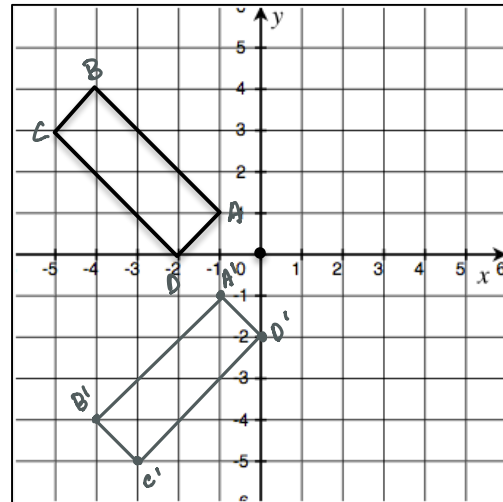
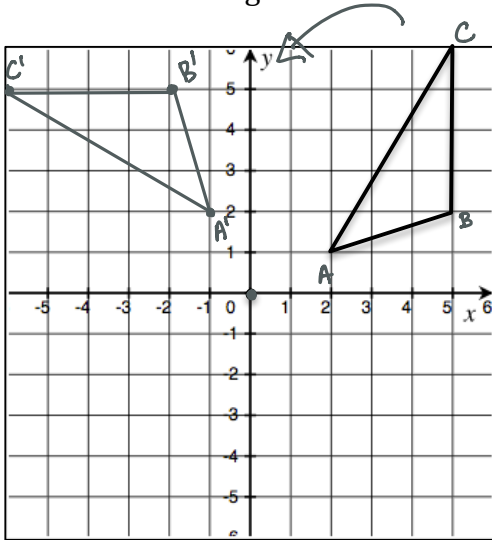


LEARNING OBJECTIVE: We will sequence all rigid motions (translations, reflections, and rotations). (G8M2L6)

ACTIVATING PRIOR KNOWLEDGE:

We remember how to rotate objects on a coordinate plane—Rotate each object 90 degrees around the origin.



CONCEPT DEVELOPMENT:

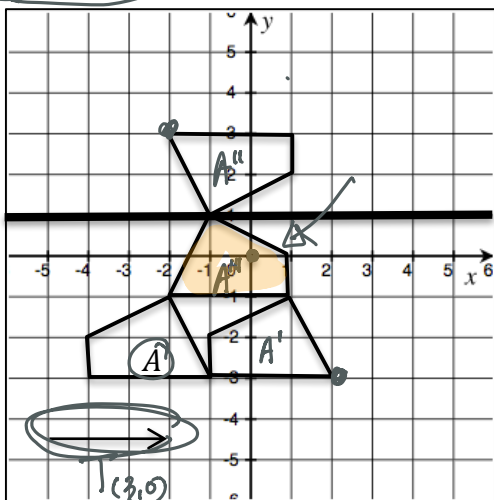
We've already looked at sequences involving translations and reflections...now it's time to include rotations.

Does the order of the sequence of rigid motions matter?

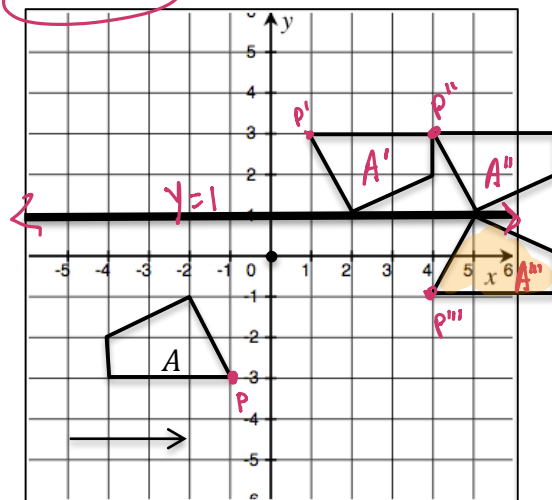
YES!! Each rigid motion tells a story about the path of the object.

YES!! The final location of the object **WILL LIKELY** be different depending on the ordering of the rigid motions!

Translate, Rotate 180, then reflect



Rotate 180, translate, then reflect

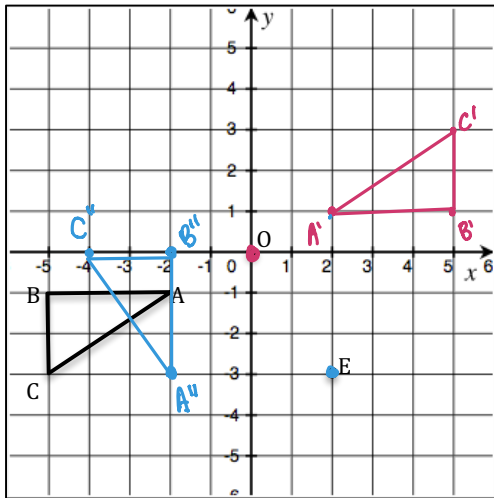


GUIDED PRACTICE:

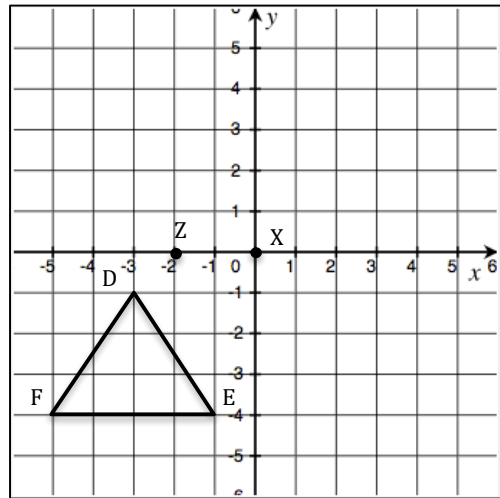
Steps for Sequencing Rigid Motion Transformations

1. Read the directions carefully.
2. Perform each transformation in sequence.

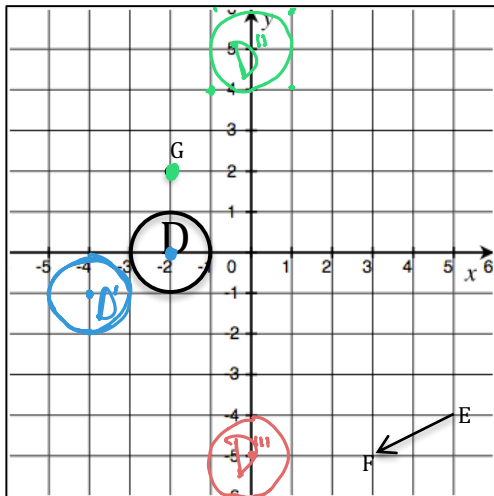
Rotate $\triangle ABC$ 180° around center O and then rotate 90° around center E .



Rotate $\triangle DEF$ 90° around center X and then rotate 90° around center Z .

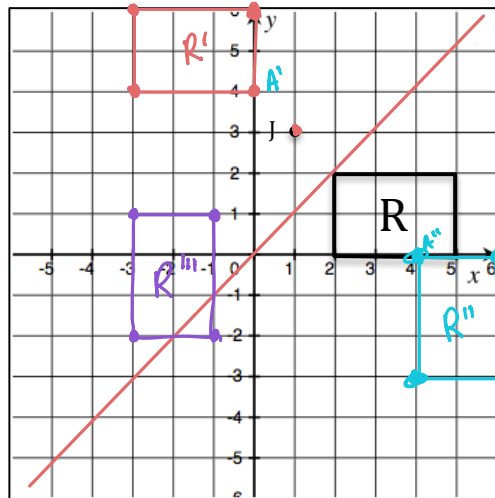


First translate circle C along \overrightarrow{EF} , then rotate 180° around center G , and then reflect over the x -axis.

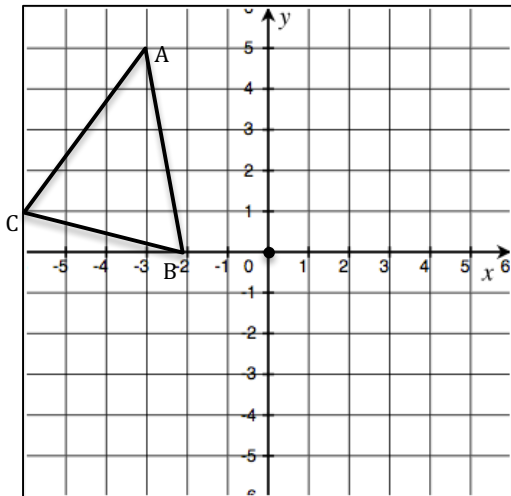


$T_{(-2,-1)}$

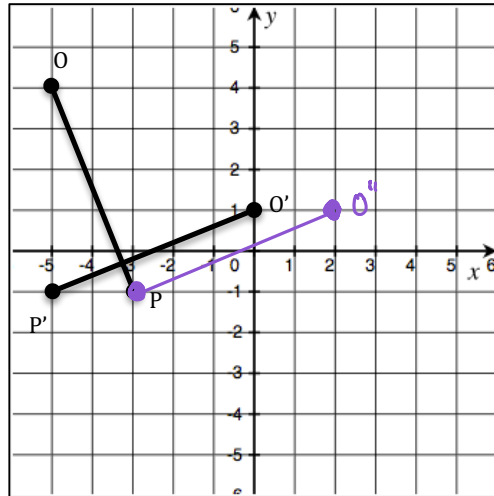
First rotate the rectangle R 180° around the center J , then reflect it across the line $y = x$. Lastly, perform translation $T_{(-7,1)}$.



First reflect the given object over the y -axis, then perform the translation $T_{(-3,-1)}$ and finally, rotate around the origin 90° .

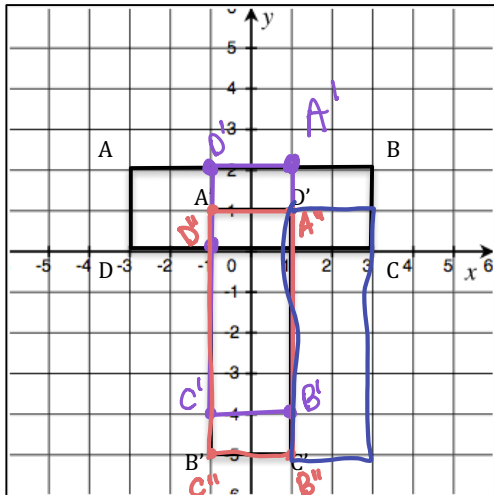


Can you describe a series of rigid motions that would map line segment \overline{OP} to $\overline{O'P'}$?



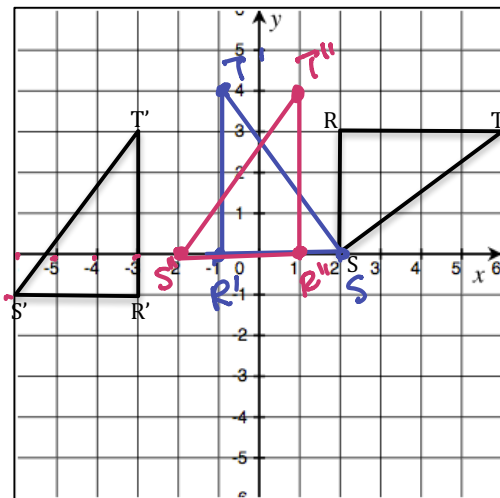
ROTATE 90° CLOCKWISE AROUND P
 $T_{(-2,0)}$

Can you describe the series of rigid motions that will map ABCD to A'B'C'D'?



Rot 90° CW around $(-1,0)$
 $T_{(0,-1)}$
 Reflect across $x=1$
 $T_{(-2,0)}$

Can you describe the series of rigid motions that would map RST to R'S'T'?



Rotate 90° CCW on $(2,0)$
 Reflect over y -axis
 $T_{(-4,-1)}$

NAME: _____

Math 7.1 , Period _____

Mr. Rogove

Date: _____

Line of Learning:

Write 3 things you know about the rigid motion transformations we've been talking about and the sequencing of these motions.

1.

2.

3.

4.

5.

6.