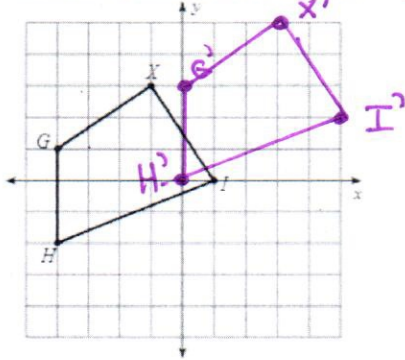


**Objectives:**

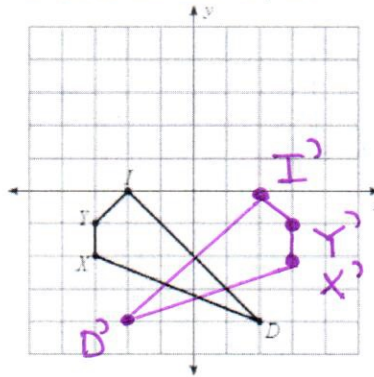
- By the end of class I will be able to determine if two figures are similar by translating, reflecting, or rotating one figure onto another.

**Warm-Up:**

1. Translate 4 units right & 2 units up    2. Reflection across the y-axis

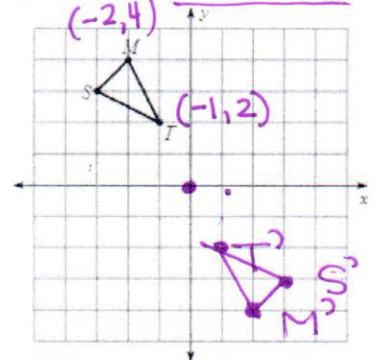


$$(x, y) \rightarrow (-x, y)$$



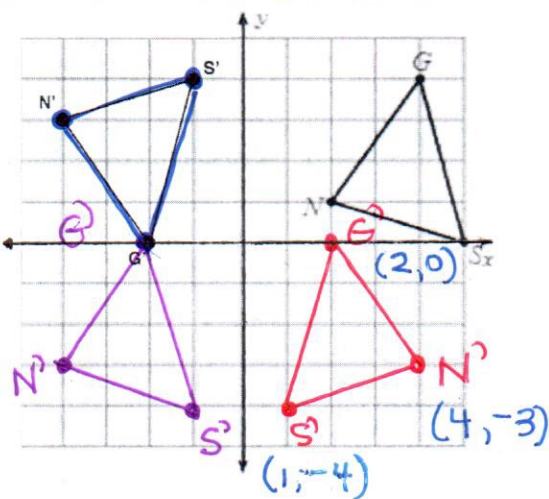
$$(x, y) \rightarrow (-x, -y)$$

3. Rotate 180° about the origin



**CONGRUENCE**

Are the following figures congruent? To find out, follow this set of instructions, in order:

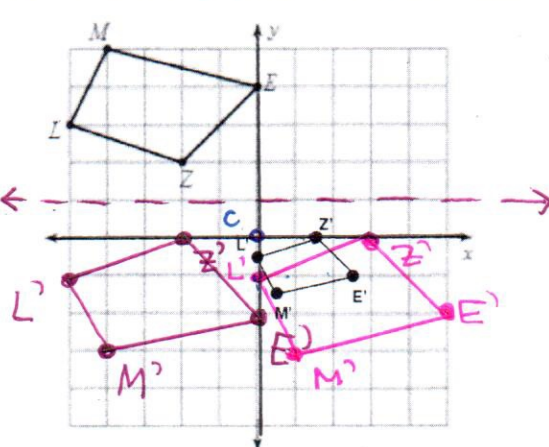


- Translate 4 units down and 6 units to the left
- Reflect across the y-axis
- Rotate 180 degrees

If I can Translate, Reflect, and/or Rotate a figure onto another figure, then I know that the two figures are congruent.

**SIMILARITY**

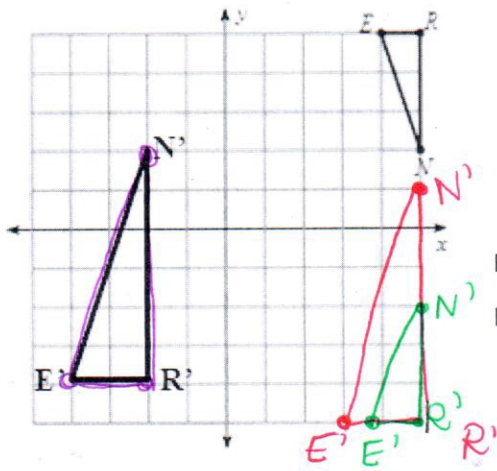
Are the following figures similar? To find out, follow this set of instructions, in order:



- Reflect across the line  $y=1$
- Translate 5 units to the right
- With center at  $(0,0)$ , dilate by a scale factor of  $k = \frac{1}{2}$

If I can Translate, reflect, and/or rotate AND DILATE a figure onto another figure, then I know that the two figures are similar.

What are the transformations that would map the pre-image onto the image?



1. Reflect over  $x$ -axis
2. Dilate by  $k=2$  center  $(5, -5)$
3. Translate left 7, up 1

Because those transformations mapped the pre-image onto the image,

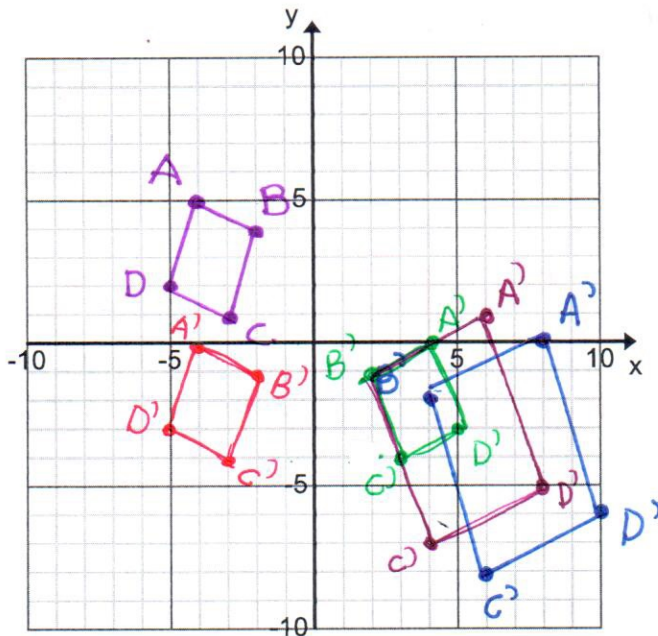
I know that  $\triangle ERN \sim \triangle E'R'N'$ .

*similar*

Prove using transformations that  $\square ABCD \sim \square A'B'C'D'$ .

$A(-4, 5)$   $B(-2, 4)$   $C(-3, 1)$   $D(-5, 2)$

$A'(8, 0)$   $B'(4, -2)$   $C'(6, -8)$   $D'(10, -6)$



① Translate down 5

② Reflect over  $y$ -axis

③ Dilate by  $k=2$   
at  $(2, -1)$

④ Translate Right 2  
down 1