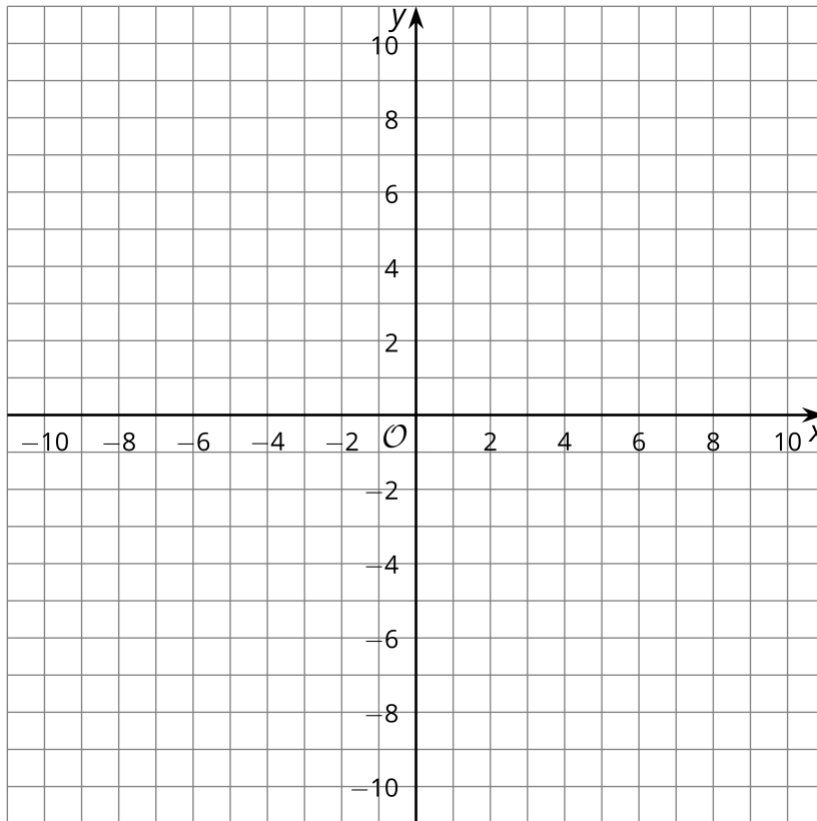


Name: _____ Period: _____

Classwork: Unit 6 Lesson 2 & 3

Lesson 2: Transformations as Functions

2.2: Inputs and Outputs



1. For each point (x, y) , find its image under the transformation $(x + 12, y - 2)$.
 - a. $A = (-10, 5)$
 - b. $B = (-4, 9)$
 - c. $C = (-2, 6)$

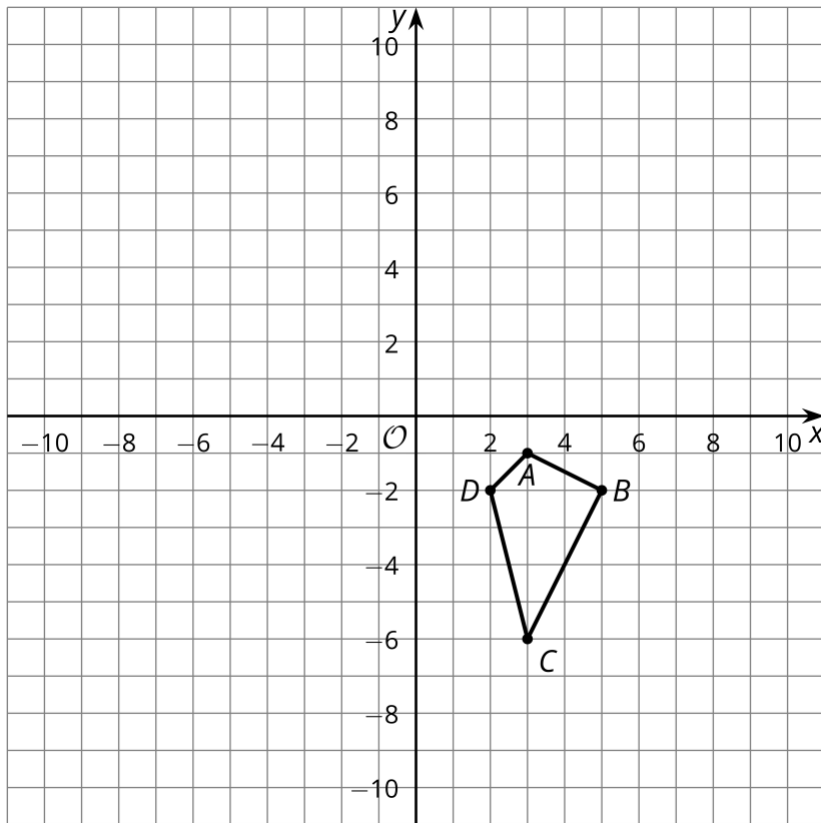
2. Next, sketch triangle ABC and its image on the grid. What transformation is $(x, y) \rightarrow (x + 12, y - 2)$?

3. For each point (x, y) in the table, find $(2x, 2y)$.

4. Next, sketch the original figure (the (x, y) column) and image (the $(2x, 2y)$ column). What transformation is $(x, y) \rightarrow (2x, 2y)$?

(x, y)	$(2x, 2y)$
(-1, -3)	
(-1, 1)	
(5, 1)	
(5, -3)	

2.3: What Does it Do?



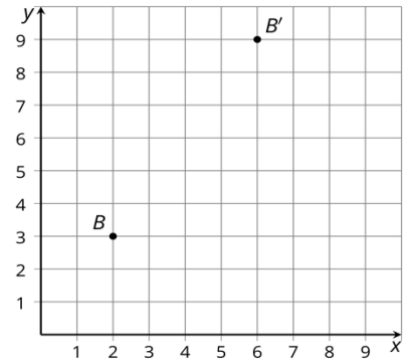
1. Here are some transformation rules. Apply each rule to quadrilateral $ABCD$ and graph the resulting image. Then describe the transformation.
 - a. Label this transformation $Q: (x, y) \rightarrow (2x, y)$
 - b. Label this transformation $R: (x, y) \rightarrow (x, -y)$
 - c. Label this transformation $S: (x, y) \rightarrow (y, -x)$

Lesson 3: Types of Transformations

3.1: Why is it a Dilation?

Point B was transformed using the coordinate rule $(x, y) \rightarrow (3x, 3y)$.

- Add these auxiliary points and lines to create 2 right triangles: Label the origin P . Plot points $M = (2, 0)$ and $N = (6, 0)$. Draw segments PB' , MB , and NB' .
- How do triangles PMB and PNB' compare? How do you know?
- What must be true about the ratio $PB : PB'$?

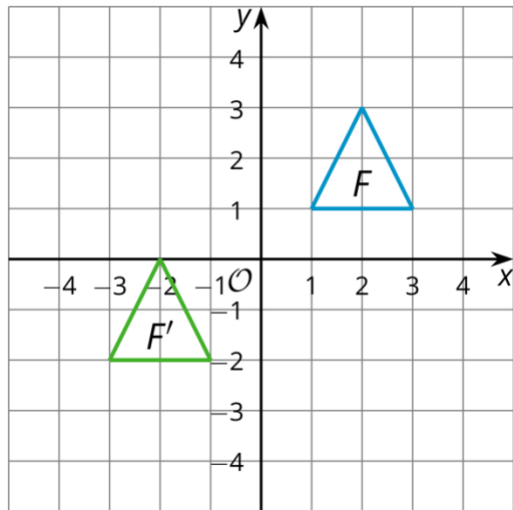


3.2: Congruent, Similar, Neither?

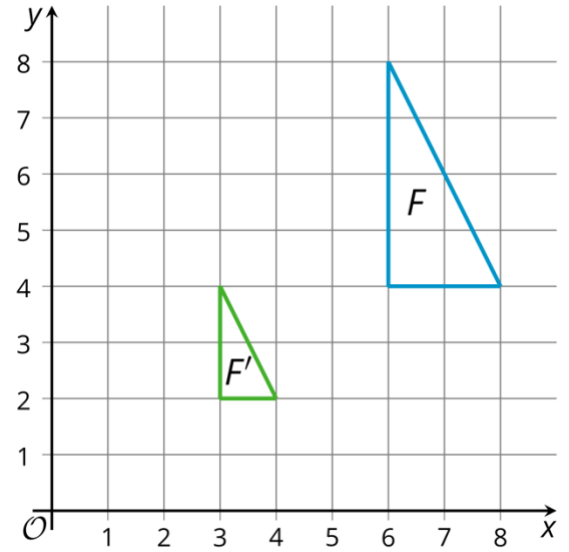
Match each image to its rule. Then, for each rule, decide whether it takes the original figure to a congruent figure, a similar figure, or neither. Explain or show your reasoning.

<p>A</p>	<p>B</p>
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C

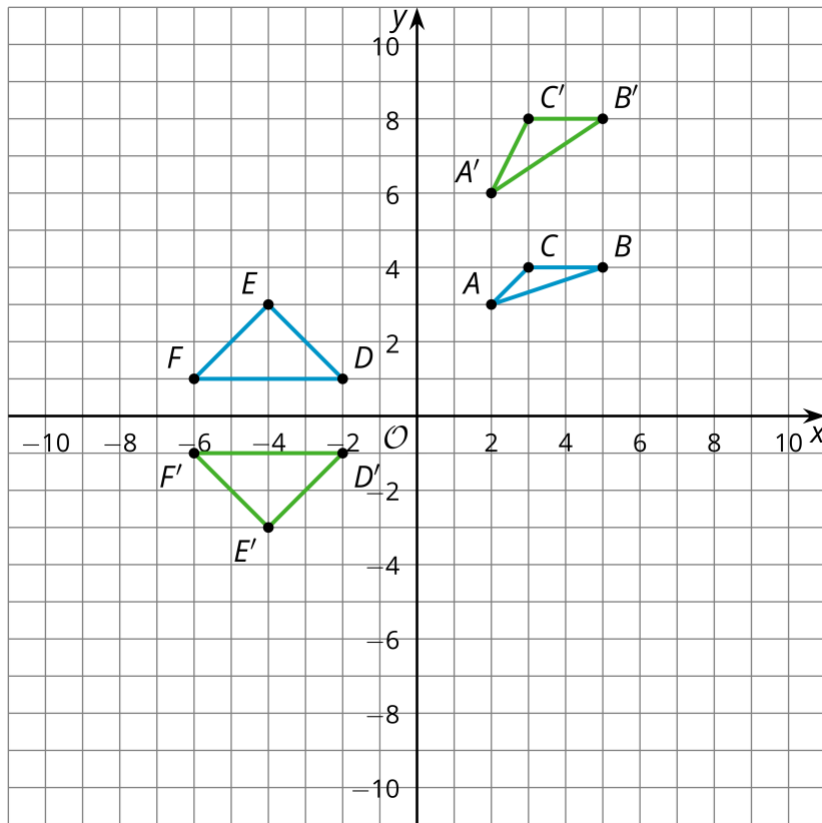


D



- $(x, y) \rightarrow \left(\frac{x}{2}, \frac{y}{2}\right)$
- $(x, y) \rightarrow (y, -x)$
- $(x, y) \rightarrow (-3x, y)$
- $(x, y) \rightarrow (x - 4, y - 3)$

3.3: You Write the Rules



- Write a rule that will transform triangle ABC to triangle $A'B'C'$.
- Are ABC and $A'B'C'$ congruent? Similar? Neither? Explain how you know.
- Write a rule that will transform triangle DEF to triangle $D'E'F'$.
- Are DEF and $D'E'F'$ congruent? Similar? Neither? Explain how you know.