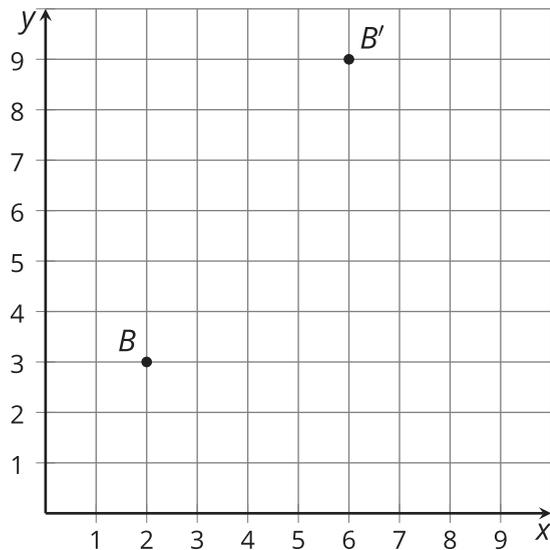


# Unit 6 Lesson 3: Types of Transformations

## 1 Why is it a Dilation? (Warm up)

### Student Task Statement

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



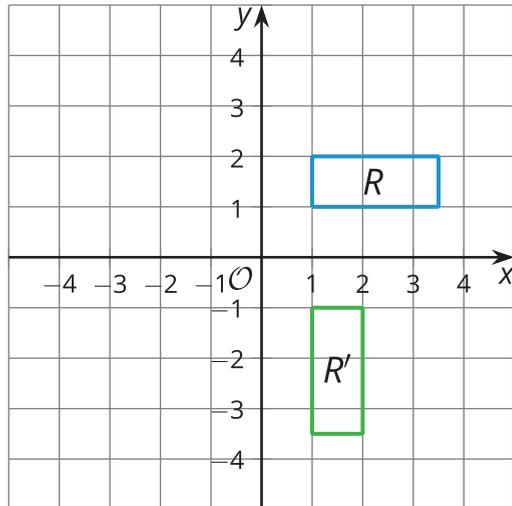
1. Add these auxiliary points and lines to create 2 right triangles: Label the origin  $P$ . Plot points  $M = (2, 0)$  and  $N = (6, 0)$ . Draw segments  $PB'$ ,  $MB$ , and  $NB'$ .
2. How do triangles  $PMB$  and  $PNB'$  compare? How do you know?
3. What must be true about the ratio  $PB : PB'$ ?

## 2 Congruent, Similar, Neither?

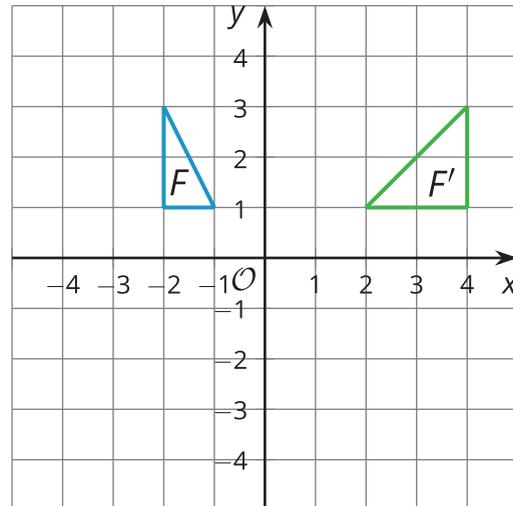
### Student Task Statement

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.

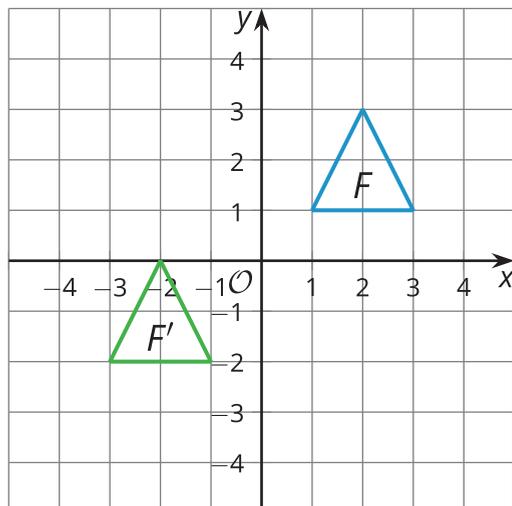
A



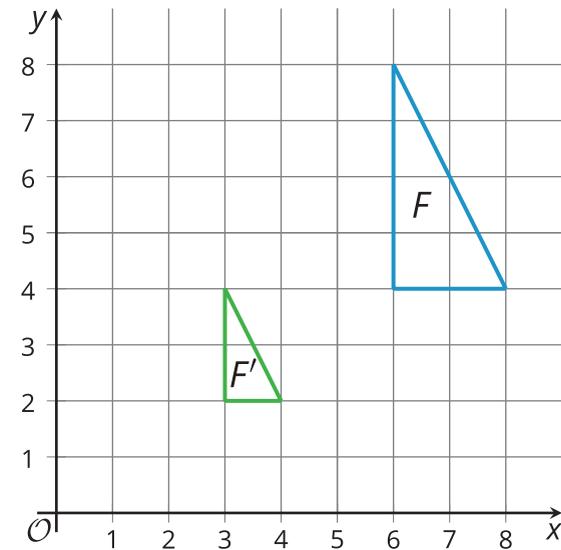
B



C



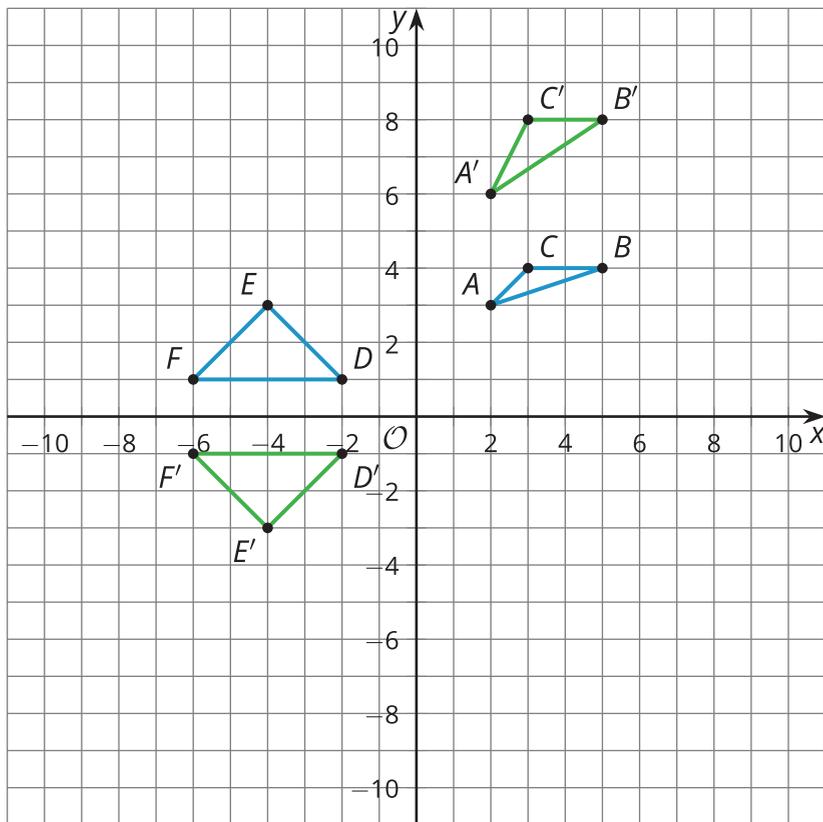
D



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

### 3 You Write the Rules

#### Student Task Statement



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