

# Translations and Reflections Notes

**Translation:** called a **slide**; no turns  
figures are **congruent**  
orientation is the **same**

When **translating** a figure, every point of the original figure is moved (slid) the same distance and in the same direction.

**Reflection:** called a **flip** across an imaginary line (line of reflection)  
figures are **congruent**  
orientation is **different**

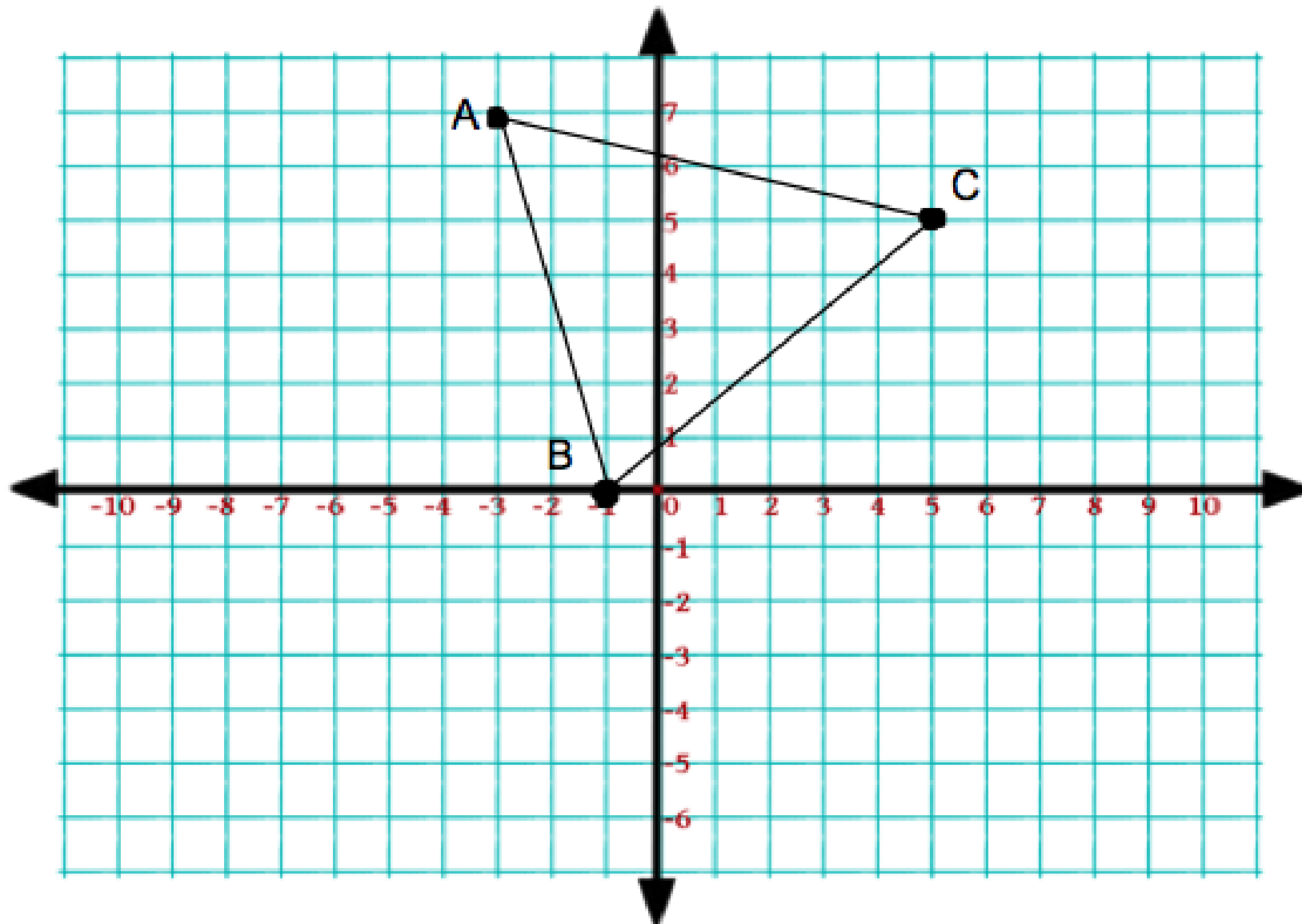
When **reflecting** a figure, every point of the original figure has a corresponding point on the other side of the line of reflection.

**Helpful Tips:** reflecting over x-axis, x stays the same, take opposite of y.  
reflecting over y-axis, y stays the same, take opposite of x

**Naming Transformations:** the new figure is labeled using prime notation.  
Ex. if the original figure is ABCD, then the new figure is labeled A'B'C'D'

Example 1: If triangle ABC is translated 4 units right and 5 units down, find the coordinates of the new image.

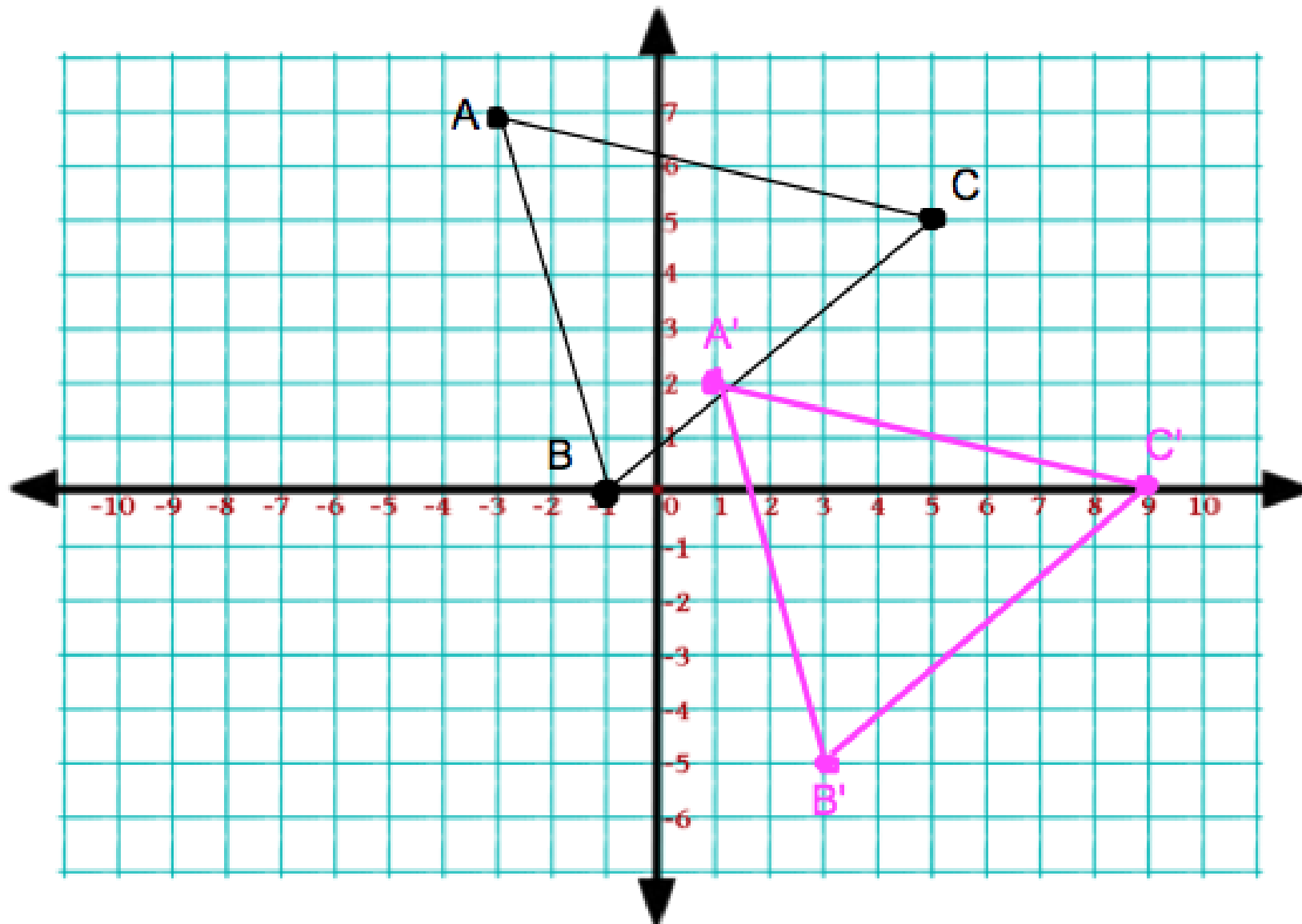
A ( -3 , 7 )  
B ( -1 , 0 )  
C ( 5 , 5 )



Example 1: If triangle ABC is translated 4 units right and 5 units down, find the coordinates of the **new image**.

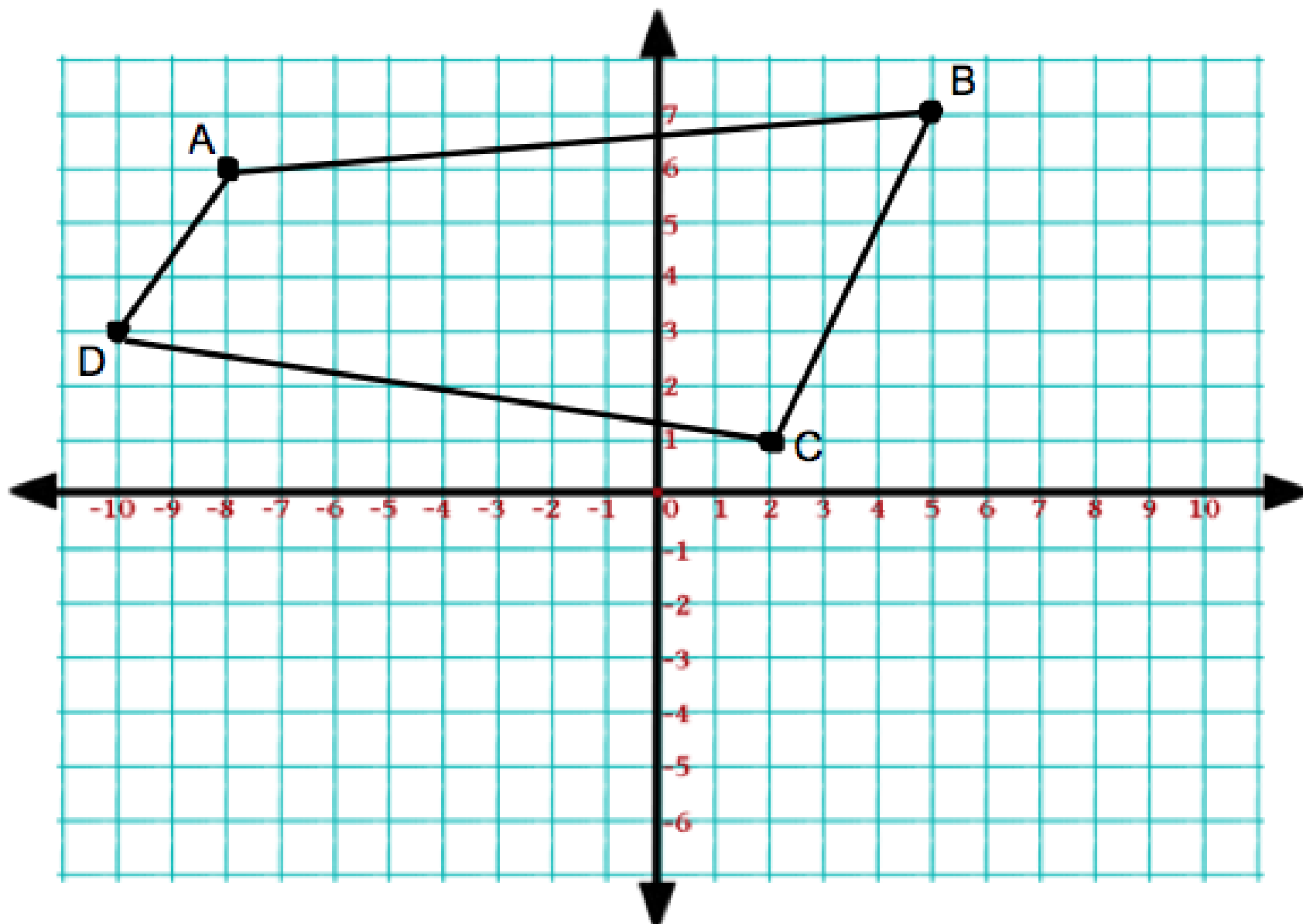
$A(-3, 7)$   
 $B(-1, 0)$   
 $C(5, 5)$

$A'(1, 2)$   
 $B'(3, -5)$   
 $C'(9, 0)$



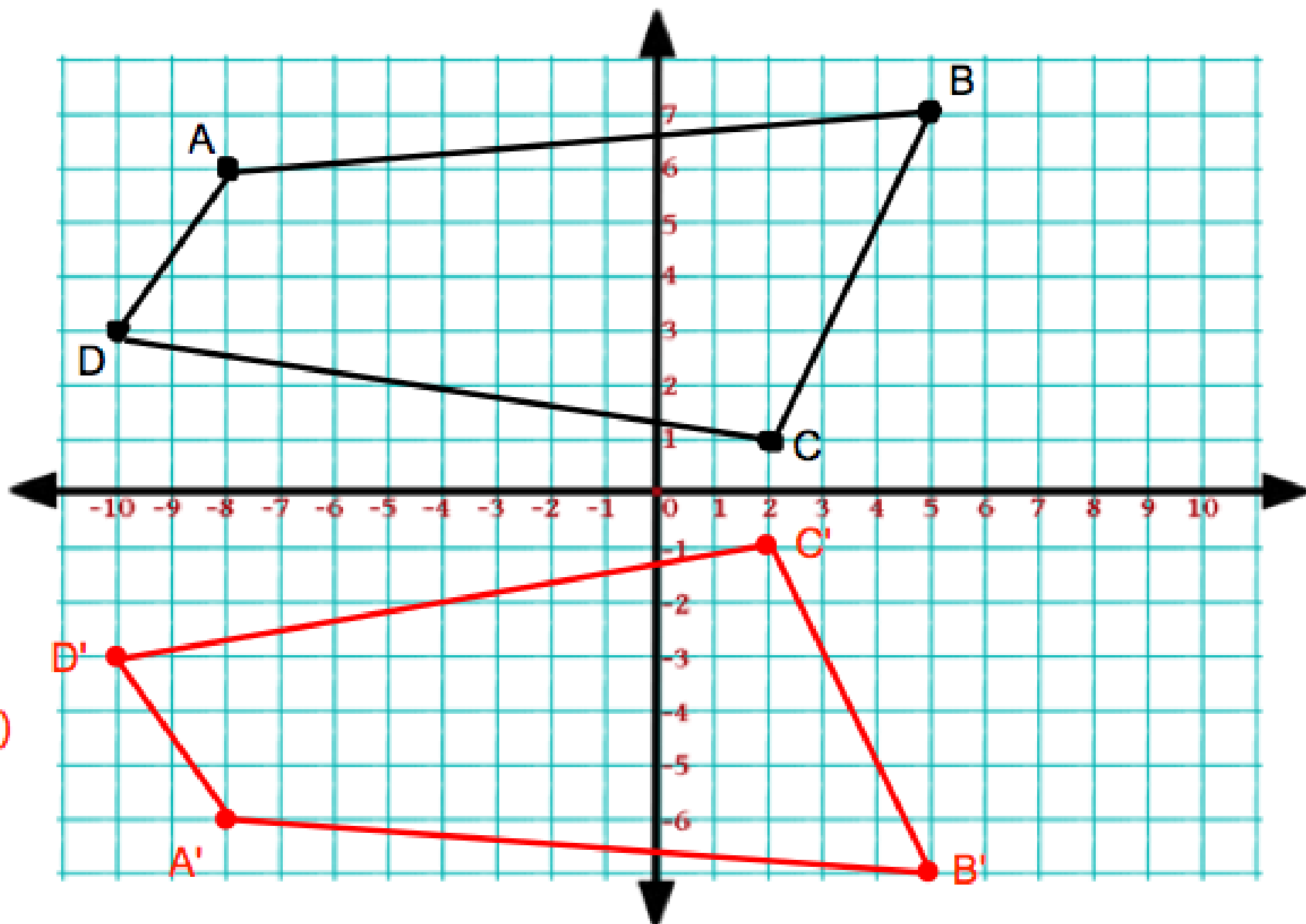
Example 2: Reflect figure ABCD over the **x-axis** and then the **y-axis**. List the new coordinates of the reflected images.

A ( -8 , 6 )  
B ( 5 , 7 )  
C ( 2 , 1 )  
D ( -10 , 3 )



Example 2: Reflect figure ABCD over the **x-axis** and then the **y-axis**. List the new coordinates of the reflected images.

A ( -8 , 6 )  
B ( 5 , 7 )  
C ( 2 , 1 )  
D ( -10 , 3 )



A' ( -8 , -6 )  
B' ( 5 , -7 )  
C' ( 2 , -1 )  
D' ( -10 , -3 )

Example 2: Reflect figure ABCD over the x-axis and then the y-axis. List the new coordinates of the reflected images.

$A(-8, 6)$   
 $B(5, 7)$   
 $C(2, 1)$   
 $D(-10, 3)$

$A''(8, 6)$   
 $B''(-5, 7)$   
 $C''(-2, 1)$   
 $D''(10, 3)$

