

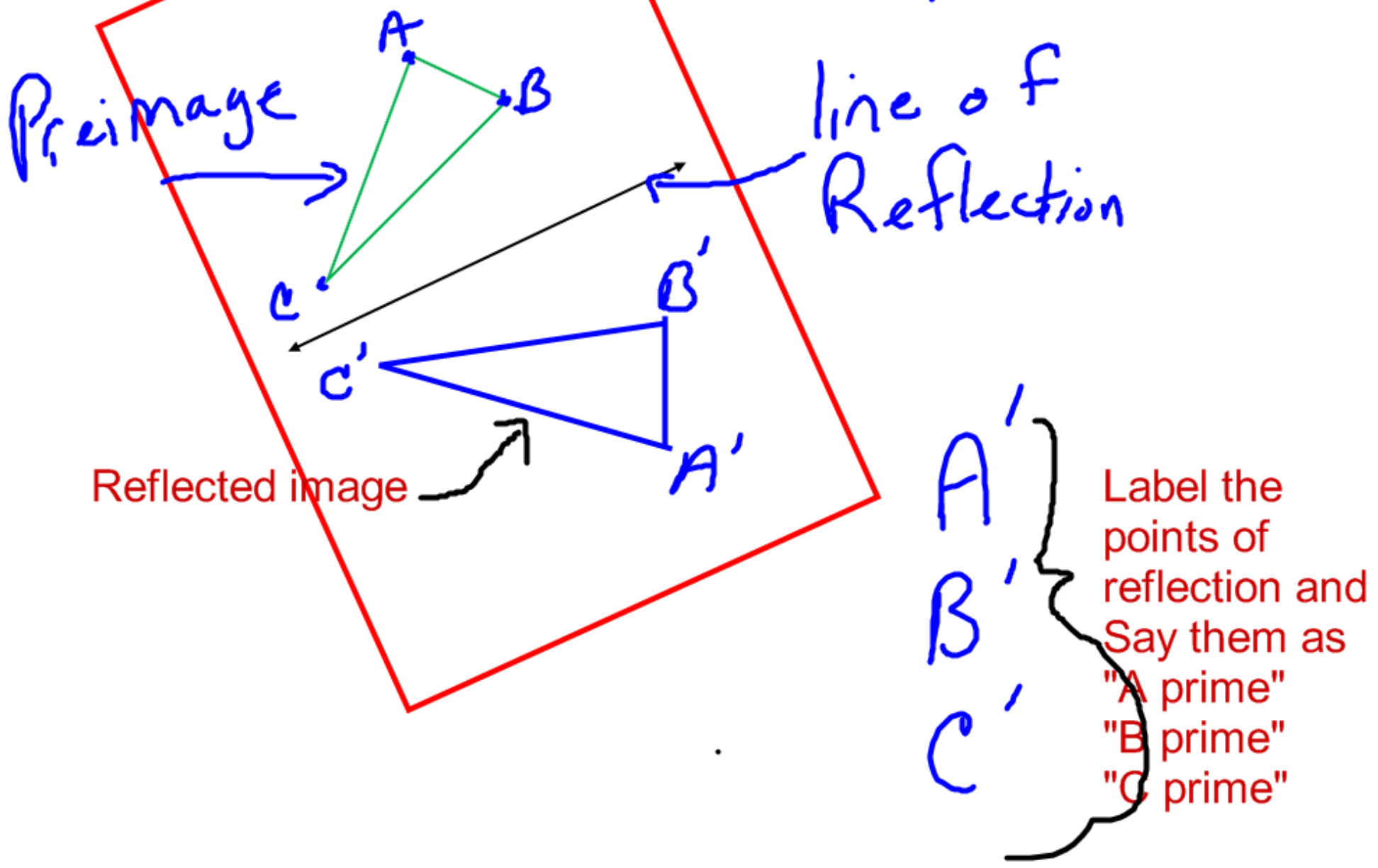
# Reflections

Draw reflections using a ruler

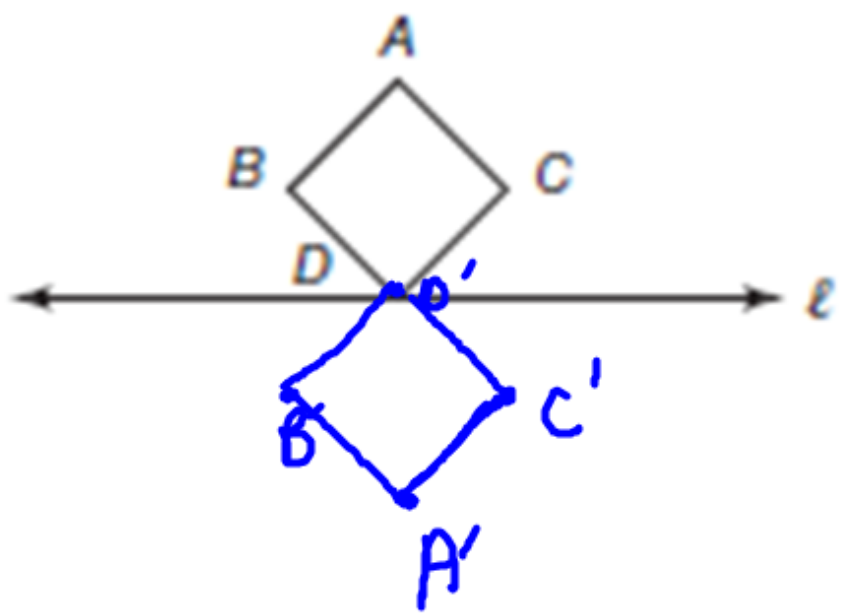
Draw reflections in a coordinate plane

# Reflection

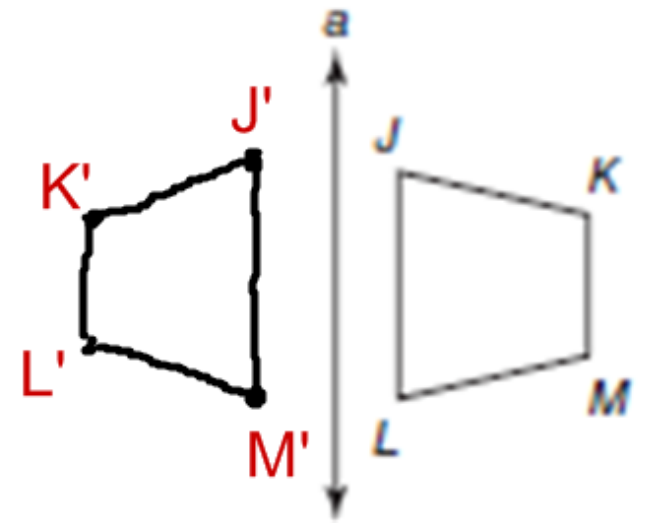
Transformation that flips a figure



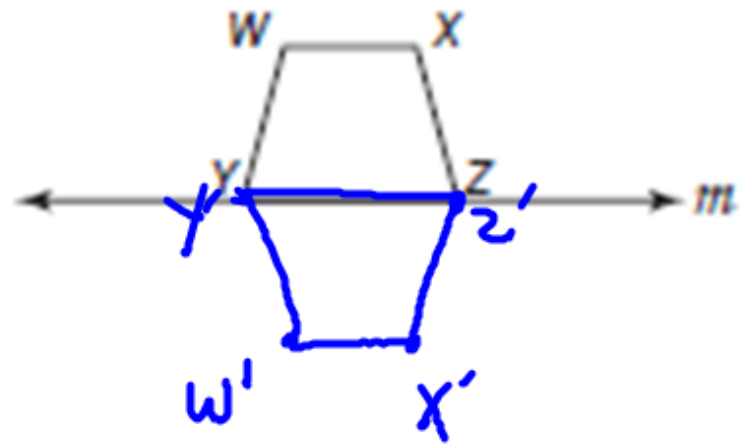
1.



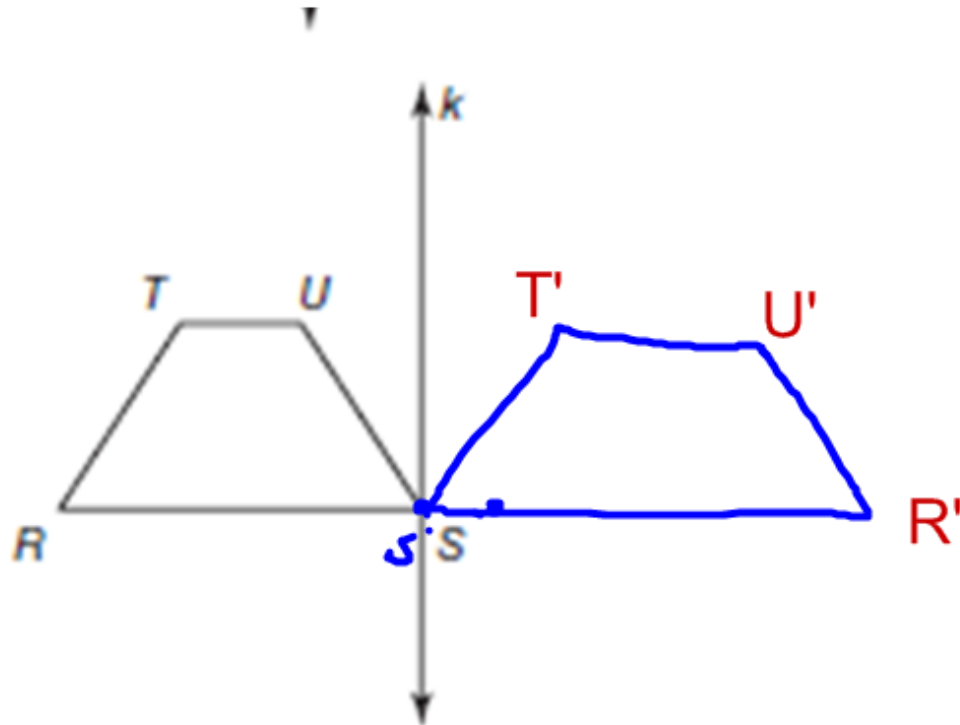
2.



3.



4.



isometry

Means the translation is congruent to the preimage

# EXAMPLE 1

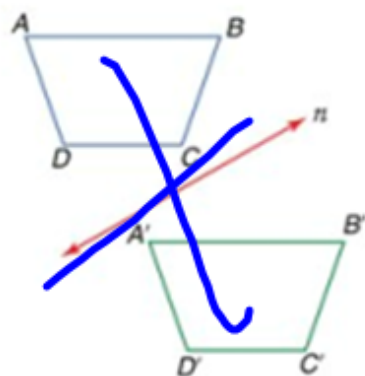


# Check Your Progress

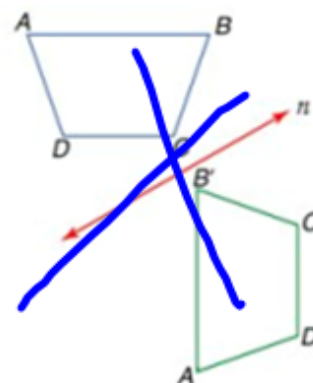


Draw the reflected image of quadrilateral  $ABCD$  in line  $n$ .

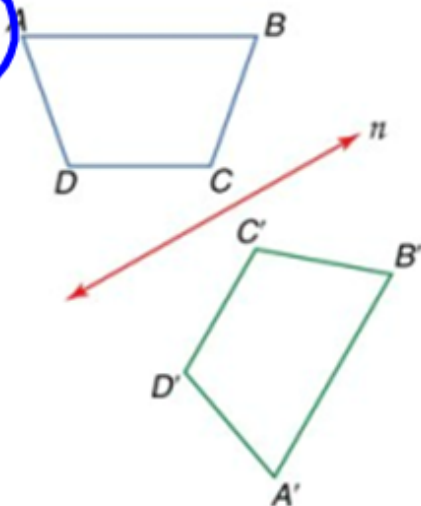
A.



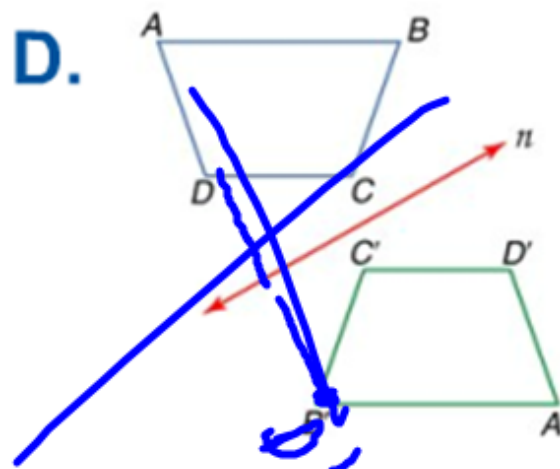
B.



C.



D.

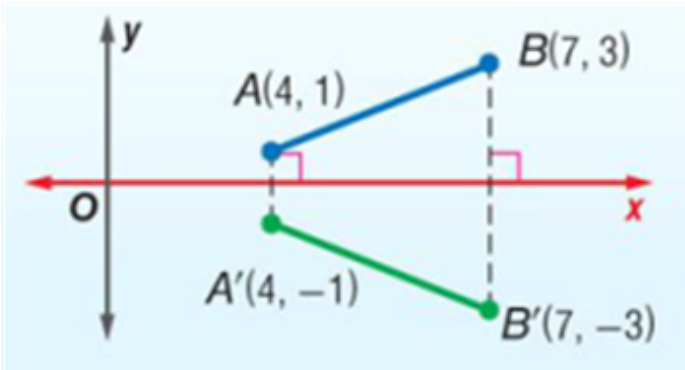


# Reflection in the x- or y-axis.....

## x-axis

**words:** multiply y coordinate by -1  
leave x-coord same, opp y

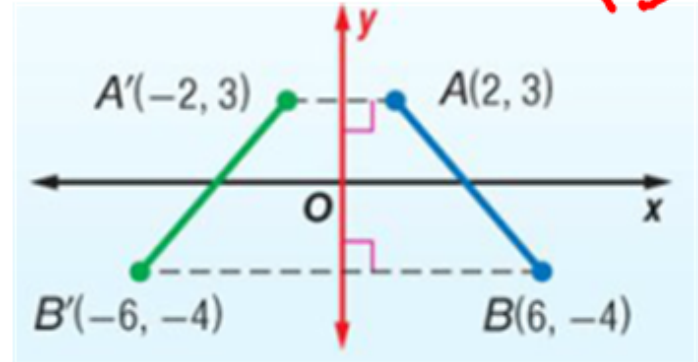
**symbols:**  $(x, y) \rightarrow (x, -y)$  coordinates  
 $A(5, -2) \rightarrow A'(5, 2)$



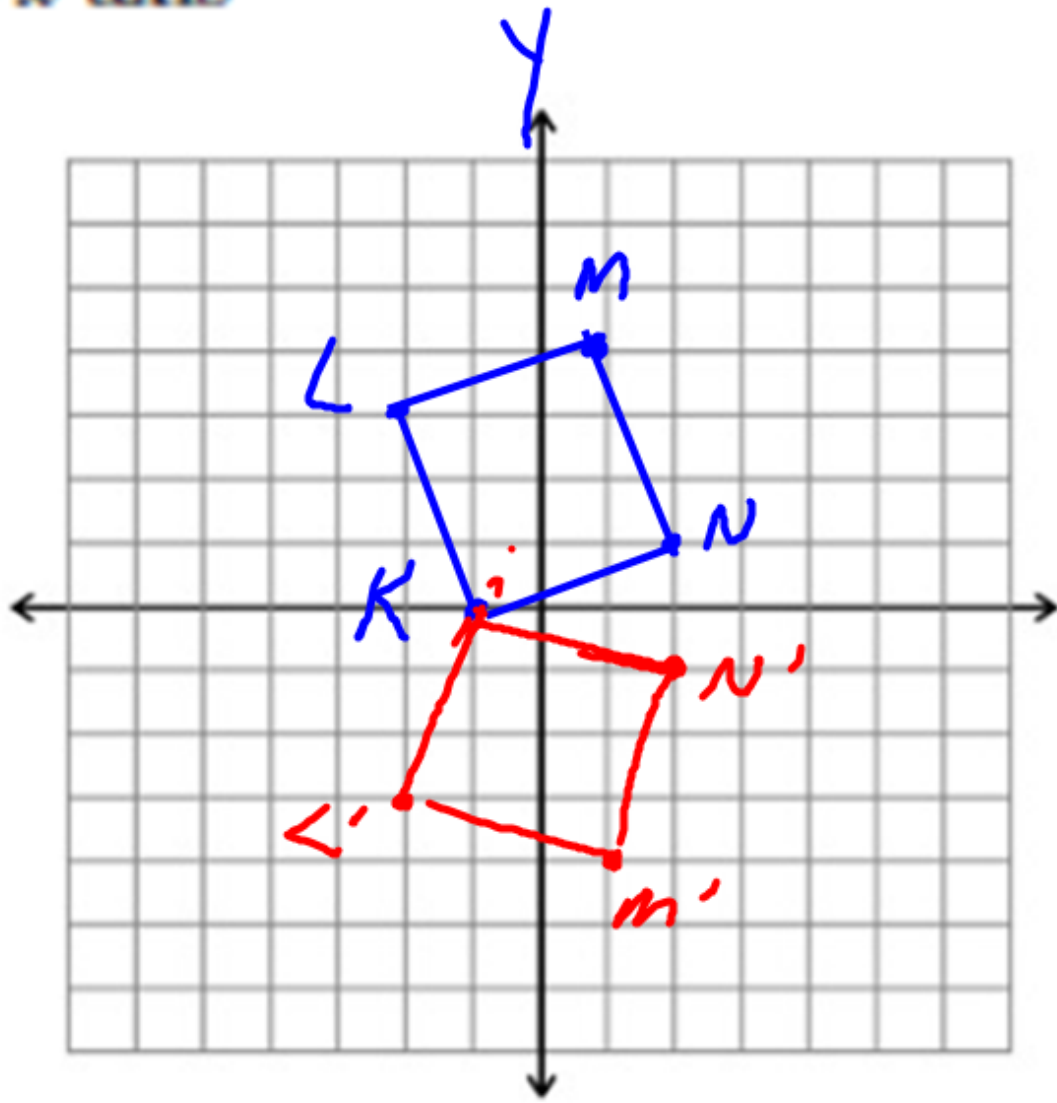
## y-axis

multiply x-coordinate by -1

$(x, y) \rightarrow (-x, y)$   
 $A(10, -4) \rightarrow A'(-10, -4)$



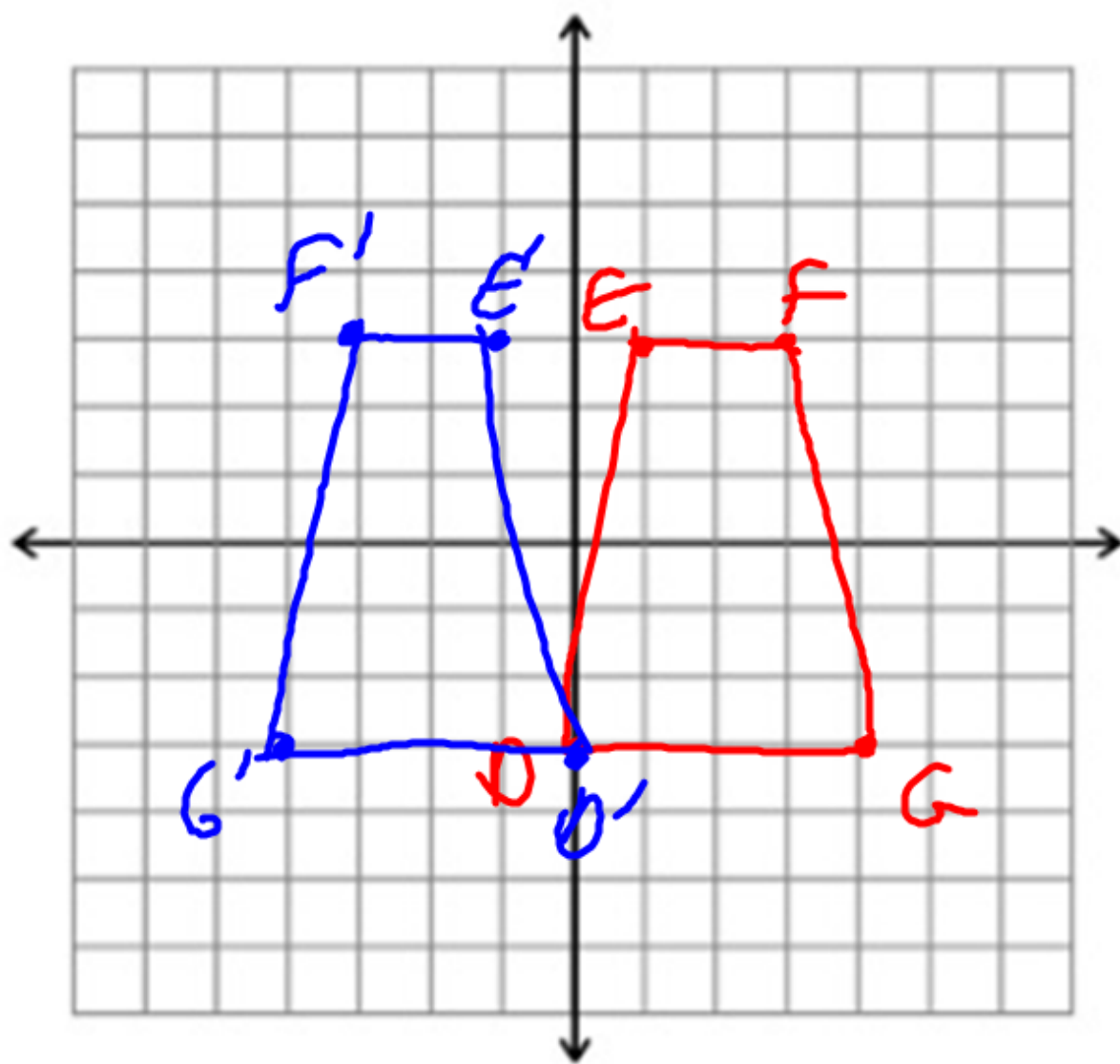
8. square  $KLMN$  with vertices  $K(-1, 0)$ ,  $L(-2, 3)$ ,  $M(1, 4)$ , and  $N(2, 1)$  in the  $x$ -axis



- $K'(-1, 0)$
- $L'(-2, -3)$
- $M'(1, -4)$
- $N'(2, -1)$

6. trapezoid  $DEFG$  with vertices  $D(0, -3)$ ,  $E(1, 3)$ ,  $F(3, 3)$ , and  $G(4, -3)$  in the  $y$ -axis

opp  $x$   
same  $y$



$D'(0, -3)$   
 $E'(-1, 3)$   
 $F'(-3, 3)$   
 $G'(-4, -3)$

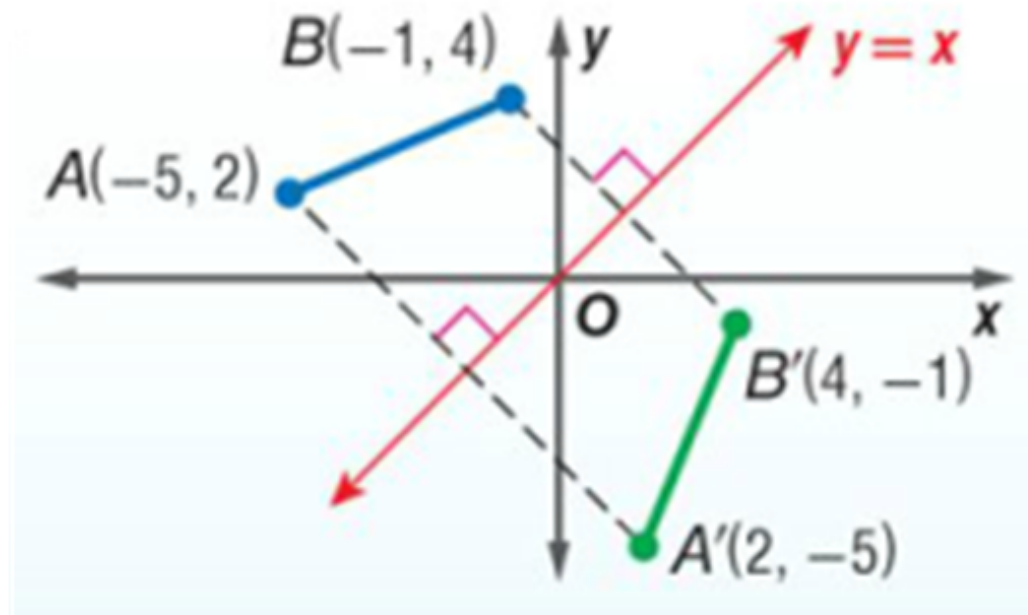
///



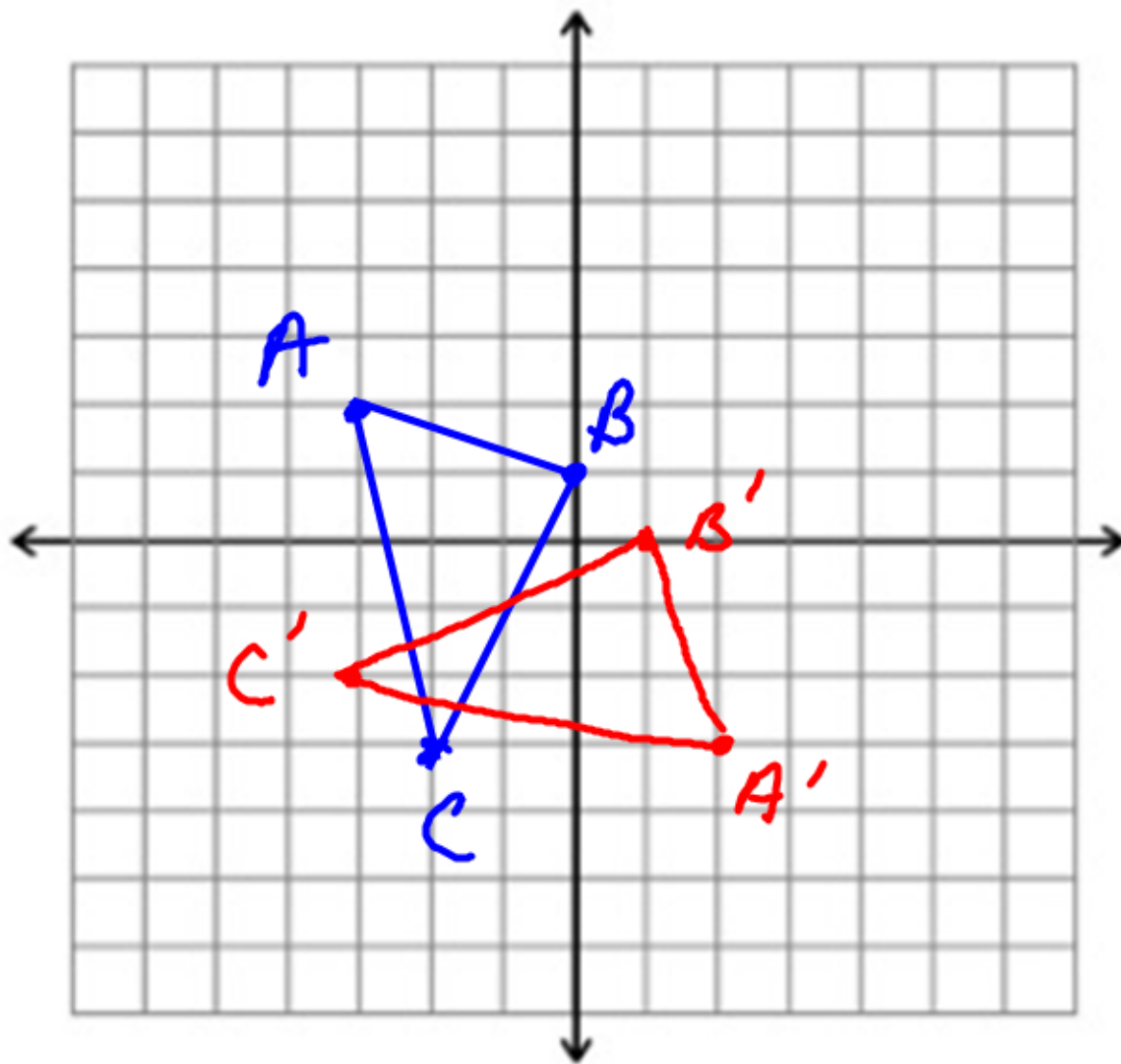
# Reflection in the line $y = x$

**words:** exchange the  $x$ - and  $y$ - coordinates

**symbols:**



5.  $\triangle ABC$  with vertices  $A(-3, 2)$ ,  $B(0, 1)$ , and  $C(-2, -3)$  in the line  $y = x$



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