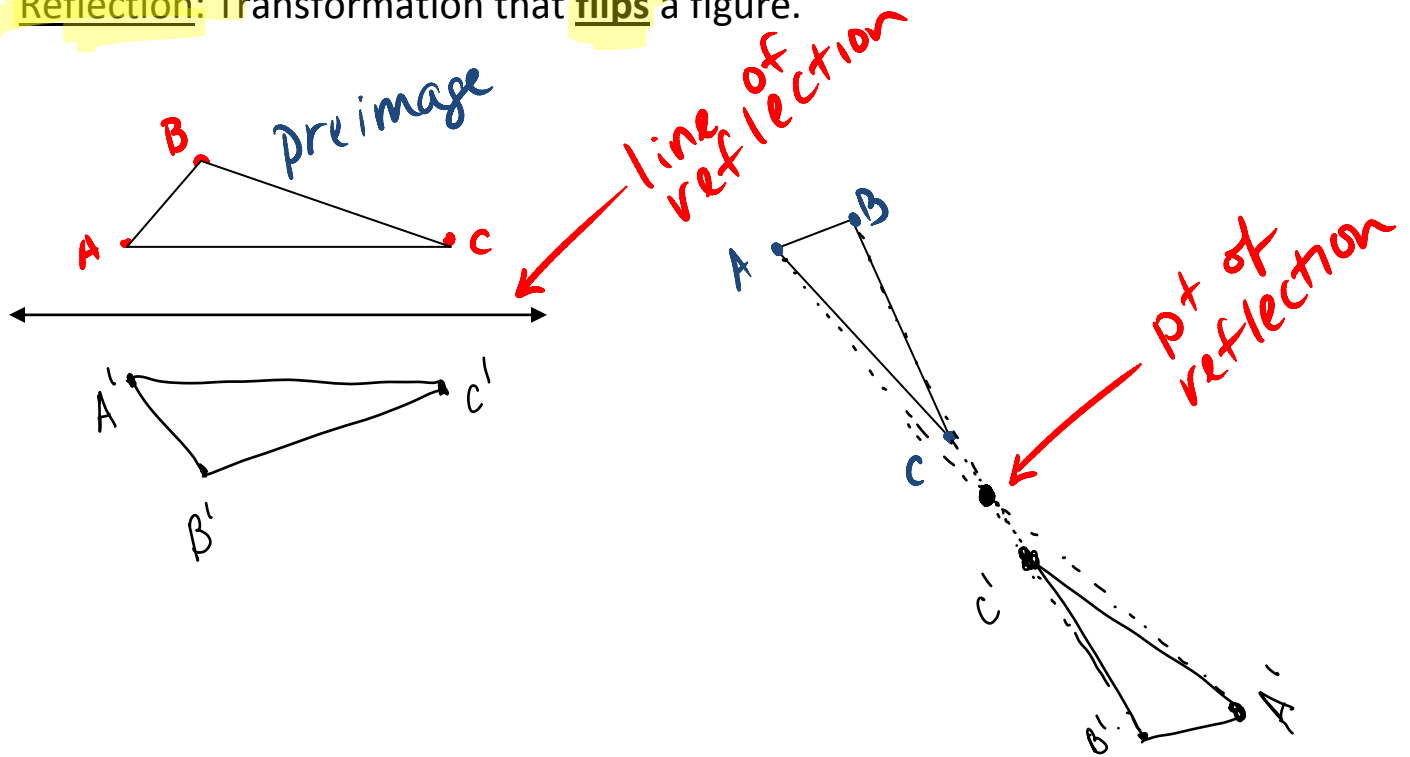
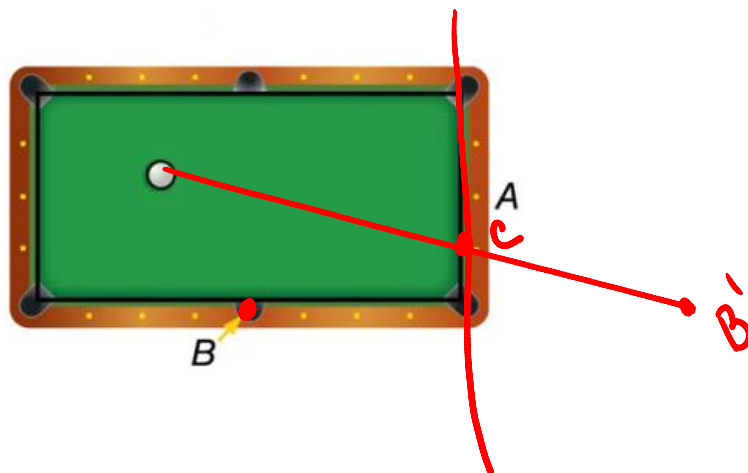


# 9.1 Reflections

**Reflection:** Transformation that **flips** a figure.

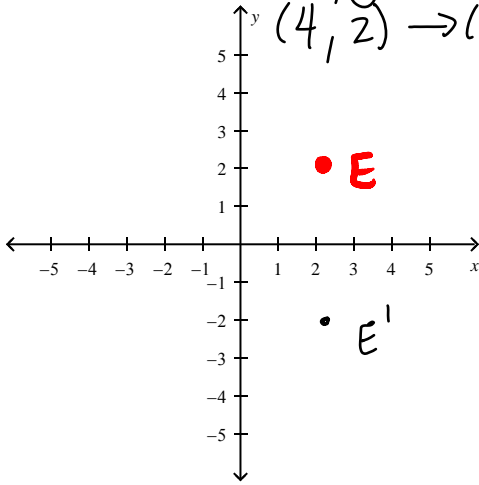


**BILLIARDS** Suppose that you must bounce the cue ball off side A before it rolls into the pocket at B. Locate the point C along side A that the ball must hit to ensure that it will roll directly toward the pocket.

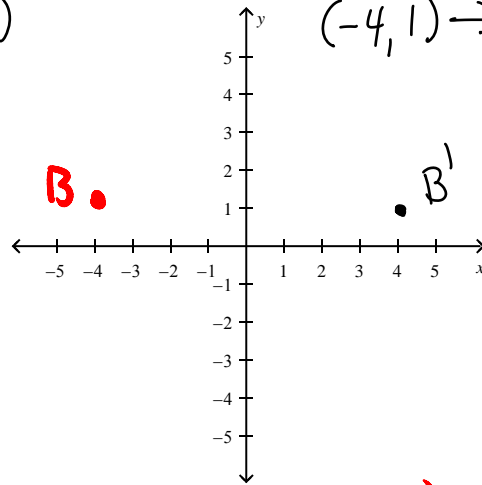


# Reflections in Coordinate Plane

x-axis  $(x, y) \rightarrow (x, -y)$   
 $(4, 2) \rightarrow (4, -2)$

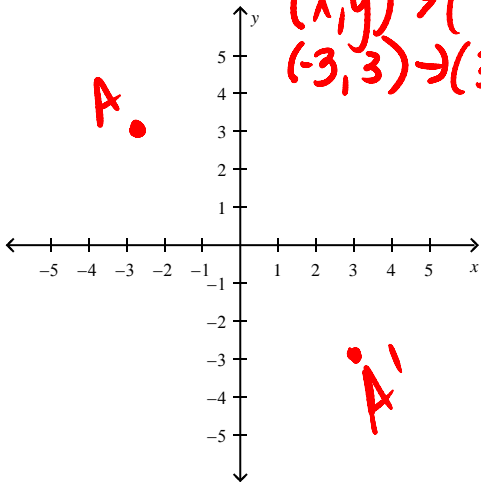


y-axis  $(x, y) \rightarrow (-x, y)$   
 $(-4, 1) \rightarrow (4, 1)$

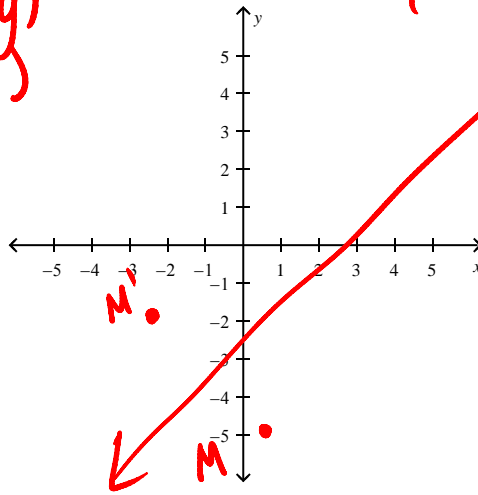


axis

Origin  $(x, y) \rightarrow (-x, -y)$   
 $(-3, 3) \rightarrow (3, -3)$



$y=x$   $(x, y) \rightarrow (y, x)$   
 $(-2, -5) \rightarrow (-5, -2)$



What if you had to reflect over a horizontal or vertical line?

$y = 2x - 2$   
 $y = -2$

$x = 3$

