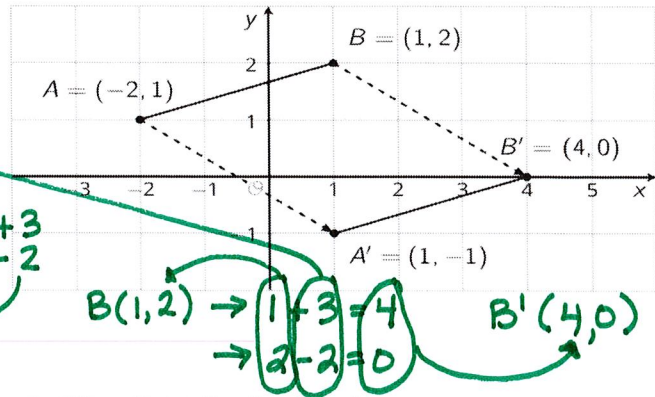


Lesson 5 Summary

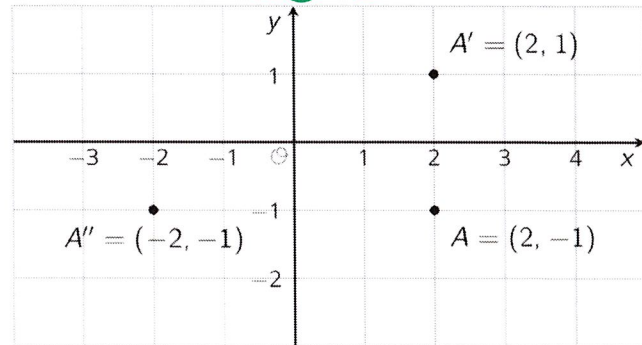
We can use coordinates to describe points and find patterns in the coordinates of transformed points.

We can describe a translation by expressing it as a sequence of horizontal and vertical translations. For example, segment AB is translated right 3 and down 2.



$\leftarrow -$ $\rightarrow +$
 $\downarrow -$ $\uparrow +$
 $A = (-2, 1)$
 right 3 means +3
 down 2 means -2
 $A' = (1, -1)$
 $-2 + 3 = 1$
 $1 - 2 = -1$

Reflecting a point across an axis changes the sign of one coordinate. For example, reflecting the point A whose coordinates are $(2, -1)$ across the x -axis changes the sign of the y -coordinate, making its image the point A' whose coordinates are $(2, 1)$. Reflecting the point A across the y -axis changes the sign of the x -coordinate, making the image the point A'' whose coordinates are $(-2, -1)$.



↑ This only works if line of reflection is x or y axis

★ Reflections across other lines are more complex to describe.★

We don't have the tools yet to describe rotations in terms of coordinates in general. Here is an example of a 90° rotation with center $(0,0)$ in a counterclockwise direction.

Point A has coordinates $(0,0)$. Segment AB was rotated 90° counterclockwise around A . Point B with coordinates $(2,3)$ rotates to point B' whose coordinates are $(-3,2)$.

