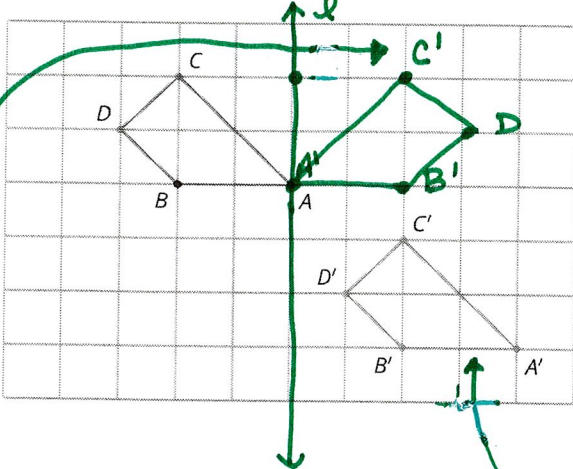


Lesson 3 Summary

When a figure is on a grid, we can use the grid to describe a transformation. For example, here is a figure and an image of the figure after a move.

\* Grid paper is good for rotations that are multiples of  $90^\circ$  ( $90^\circ, 180^\circ, 270^\circ$ )



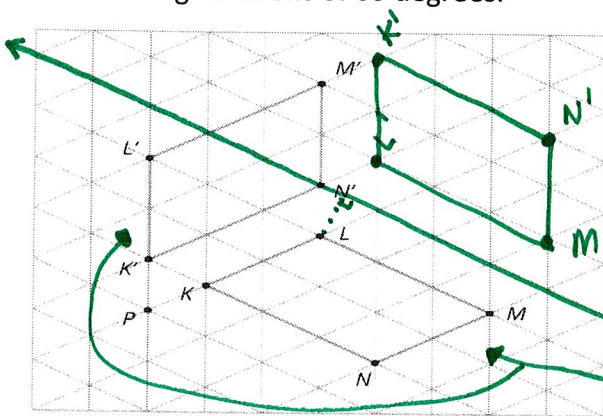
Quadrilateral  $ABCD$  is translated 4 units to the right and 3 units down to the position of quadrilateral  $A'B'C'D'$ .

Prime notation - shows the image  
ex:  $A$  and  $A'$  are corresponding points

- Graph a translation by moving each point in the shape the same amount & direction. Connect your points to make image.
- ex: move each point down 3 and right 4

A second type of grid is called an *isometric grid*. The isometric grid is made up of equilateral triangles. The angles in the triangles all measure 60 degrees, making the isometric grid convenient for showing rotations of 60 degrees.

\* Isometric grids are good for rotations that are multiples of  $60^\circ$  ( $60^\circ, 120^\circ, 180^\circ, 240^\circ, 300^\circ$ )



Here is quadrilateral  $KLMN$  and its image  $K'L'M'N'$  after a 60-degree counterclockwise rotation around a point  $P$ .

- Graph a rotation by tracing the shape & grid lines on a transparency (label the points) thru the point of rotation
- rotate transparency in the direction and amount of degrees
- shape will move to where image shape will be, copy it onto your paper

Steps for graphing a reflection:

- Count how many units the point is  $\perp$  to the line, count that many units on the other side of the line and make image point
- do with each point of shape
- connect the points to make image shape