**Slope, Midpoint, and Distance Formula Task**

**Follow these step by step directions to create a unique geometric design.**

1. On a piece of graph paper, select 4 points that form a general quadrilateral that is not a special quadrilateral. Label your quadrilateral ABCD. Use a straightedge or ruler to draw the sides using colored pencil.
2. List the coordinates of the points that you chose. Record them here.

A\_\_\_\_\_\_\_\_\_\_\_

B\_\_\_\_\_\_\_\_\_\_\_

C\_\_\_\_\_\_\_\_\_\_\_

D\_\_\_\_\_\_\_\_\_\_\_

1. On the graph, visually locate the midpoint of each side of ABCD and draw a point that shows the midpoint of each side. Label the midpoints MNOP, beginning with the midpoint of segment AB. List the coordinates of the points. Record them here. Draw quadrilateral MNOP in a different color.

M\_\_\_\_\_\_\_\_\_\_\_

N\_\_\_\_\_\_\_\_\_\_\_

O\_\_\_\_\_\_\_\_\_\_\_

P\_\_\_\_\_\_\_\_\_\_\_

1. Record your observation about MNOP.
2. Find the midpoints of the sides of ABCD using the midpoint formula. Show your work here.
3. Find the slopes of the sides of MNOP. Show your work.
4. Find the lengths of the sides of MNOP using the distance formula. Show your work here.
5. Using slope and distance, show that MNOP is a parallelogram.