G6 Assignment: Shape Analysis **Name:**

For this assignment you will graph a quadrilateral and then analyze it in depth. Your score will be based on the level of challenge, quality of analysis, organization, and creativity in the poster.

1 Choose one of these shape to analyze:

- Rectangle
- Rhombus
- Kite
- Parallelogram

Transform a triangle to create one of the four shapes above. Write coordinate rules for each of the transformations that you perform on the **original** triangle.

- Note: You will need to transform (rotate, reflect, or translate) the original triangle at least three times.

2 Make a graph of your shape and label the vertices with letters and coordinates.

- You must graph your shape so there are **no horizontal or vertical lines**.
- Use graph paper.

3 State the **side and diagonal definitions** of your shape.

- Make sure the definitions are complete, accurate, and precise.

4 Use **algebra** to:

- Prove the **definitions** for your shape.
- Find the **equation** for the sides.
- Find the **equations** of the two diagonals.
- Find the **perimeter** of your shape.
- Find the **area** of your shape.

Show all of your work and keep it organized.

5 Find a point that divides one of the sides into $\frac{2\ equal\ part}{3\ equal\ parts}$. For example, if AB is the side then find the point F so that $\frac{AF}{FB} = \frac{2}{3}$ **.**

Show all of your work and keep it organized.