## 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.

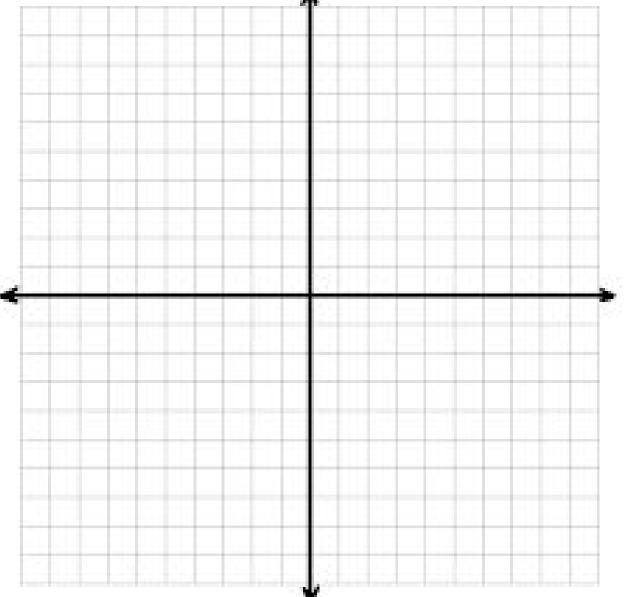
- Note: You will need to transform (rotate, reflect, or translate) the original triangle at least three times.
- 2 Make a graph of your shape and label the vertices with letters and coordinates.
  - You must graph your shape so there are **no horizontal or vertical lines**.
  - Use graph paper.
- 3 State 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.



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