

## Discovering Properties of Quadrilaterals

*Directions:* Use the different quadrilateral shapes in Geogebra Measure all angles and sides of each figure. Create diagonals and measure lengths and angles created by diagonals. Find as many properties about each figure and record in chart below. Then answer the questions at the end.

| <b>Quadrilaterals</b> |                  |                      |
|-----------------------|------------------|----------------------|
| <b>Square</b>         | <b>Rectangle</b> | <b>Parallelogram</b> |
|                       |                  |                      |
| <b>Rhombus</b>        | <b>Kite</b>      | <b>Trapezoid</b>     |
|                       |                  |                      |

Questions:

- 1) Find the midpoint of the legs of the trapezoid and draw a segment connecting them. What do the new angles measure?
  
- 2) What would happen to the properties of a trapezoid if the legs were the same length (isosceles trapezoid)? Did anything new happen?
  
- 3) Create any quadrilateral not already done so. Are there any different properties for it?
  
- 4) Write a definition that you would use for a trapezoid. (Example: A square is a quadrilateral with four congruent sides)
  
- 5) Write a definition that you would use for a kite.
  
- 6) Are all squares rectangles or are all rectangles squares? Explain your reasoning.