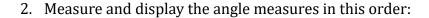# Trapezoid Properties Investigation

Use the [Geogebra applet](#) to help you complete the following investigation. BE SURE to move the vertices and sides of this trapezoid around after completing each step in order to help you make more informed conjectures.

1. Measure and display the lengths of all 4 sides. What, if anything, do you notice?

2. Measure and display the angle measures in this order:

    - $\angle CDA$

    - $\angle DAB$

    - $\angle ABC$

    - $\angle BCD$

3. What do you notice about the angle measures?

4. Construct the midpoint of $\overline{AD}$ and $\overline{BC}$ (select the point tool to find the midpoint tool - it is the tool with the red point between 2 blue points). Show the labels for those points (right click on the points and Show Label). Label those points E and F (right click to rename if needed).

5. Construct the segment $\overline{EF}$.

6. Measure the slopes of $\overline{AB}$, $\overline{DC}$, and $\overline{EF}$. What do you notice? What can you say about $\overline{EF}$ compared to $\overline{AB}$ and $\overline{DC}$.

7. What properties for a trapezoid can you add to your Quadrilaterals Toolkit?