



## Geometer's Sketchpad and Coordinate Graphing

1. Open Geometer's Sketchpad and maximize the work area.
2. Using the tool bar, set up your grid:
  - a. "**Graph**" > "**Show Grid**" – this will cause an x,y axis and grid to appear
  - b. Click on the red dot at the **center** of the graph (where the axes meet) – drag this, so the whole grid moves. Drag the center down near the lower left corner of your screen (see *image at left*).
  - c. "**Graph**" > "**Snap Points**"
3. Plot the following with the point tool, and connect them in the order you make them (point one connected to point two, point two to three, point three to point four, and point four back to point 1) in order to make a closed figure.
 

(2,2) (6,2) (6,8) (2,8)
4. What shape did these connected points make?
5. Make a shape congruent to this one (same type, same size) elsewhere in the grid. Write down the ordered pairs that make up the vertices of the new figure. Describe how you connected the points of the 2<sup>nd</sup> figure, including any special tools you used.
6. Look over the ordered pairs for each of the two figures you have just made. Are there any patterns you notice? Describe them. What do these patterns have to do with the definition of the figure, or how you could use the patterns to help describe the properties of the figure to someone else?
7. Begin a new sketch ("File" > "New", OR CTRL + N). Set up the grid in the same fashion as you did for sketch #1. Plot the following points and connect them to make a closed shape, as you did above.
 

(1,2) (5,2) (7,4) (3,4)
8. What polygon did they form?

9. Make another polygon with the same shape, but non-congruent (not the same size). Record the ordered pairs you used to construct the shape.
10. What patterns do you notice for the ordered pairs for this shape? Describe this in detail.
11. Begin a third new sketch ("File" > "New", OR CTRL + N). Set up the grid in the same fashion as you did for sketch #1. Plot the following points and connect them to make a closed shape, as you did above.  
  
(2,1) (4,1) (6,3) (1,3)
12. What polygon did these points form?
13. Make another polygon like this one: include a 90-degree angle in this second polygon.
14. What patterns are apparent in these figures, based on the ordered pairs? Describe your observations.
15. Begin a fourth new sketch ("File" > "New", OR CTRL + N). Set up the grid in the same fashion as you did for sketch #1. Plot the following points and connect them to make a closed shape, as you did above.
16. Draw four triangles in total: one right, one acute, one obtuse, and one equilateral triangle. Which was the most difficult to construct? What special tools did you use to ensure the accuracy of the drawing?
17. Use the text tool to label the vertices of all of the triangles as well as name which type each is. Using the text tool again, put your name on your sketch.
18. Print out the sketch and submit it for assessment.

---

Based on CESA #9 Demonstration Lesson from "Teach Wisconsin" at <http://www.cesa9.k12.wi.us/teachweb/guide.html>