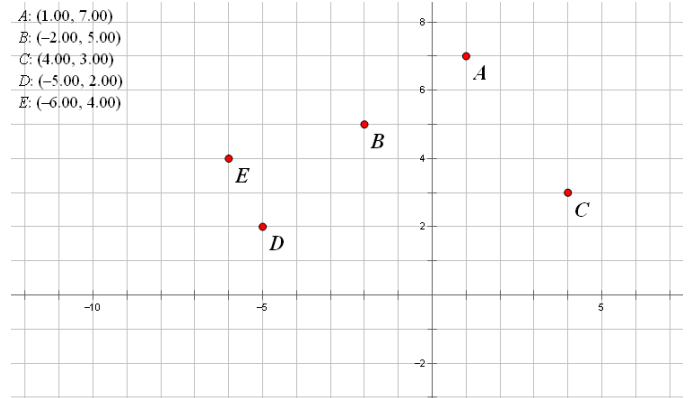


Lining Up Points in a Plane Using Sketchpad

Lines drawn on a graph can be described mathematically. In this activity, you'll begin to see how this happens by simply exploring simple patterns on the x-y plane.

Directions:

1. Open a new sketch.
2. Turn the Coordinate axis on by pulling down the Graph Menu and selecting Define Coordinate System
3. Pull down the Graph menu and select Snap Points.
4. Choose the Point tool from the Toolbox. While holding down the Shift key click on the screen at different locations to create at least 5 points. (All the points should be highlighted.)
5. While the points are selected pull down the Measure menu and select Coordinates.
6. Now begin to explore. Rearrange the points on the graph so that the y-coordinate meets the description for each of the following statements. Make a sketch of your graph on a set of mini-grids and record the description below each picture.



For each point,

- A) The y-coordinate equals the x-coordinate.
- B) The y-coordinate equals twice the x-coordinate.
- C) The y-coordinate equals one-half the x-coordinate.
- D) The y-coordinate equals two more than the x-coordinate.
- E) The y-coordinate and the x-coordinate add up to 4.
- F) The y-coordinate is the opposite of the x-coordinate.
- G) The y-coordinate is the square of the x-coordinate.
- H) The y-coordinate is equal to 2 minus the x-coordinate.

