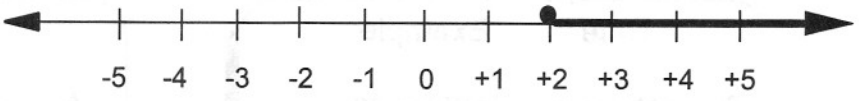
Unit 46 Coordinate Graphs

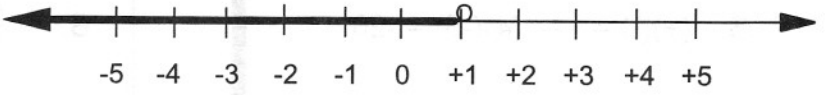
1. Graphing on a **number line**

   A. This is a graph of $x \geq 2$.



   Note: The circle over the 2 is filled in because x **can** equal 2.

   B. This is a graph of x < 1.

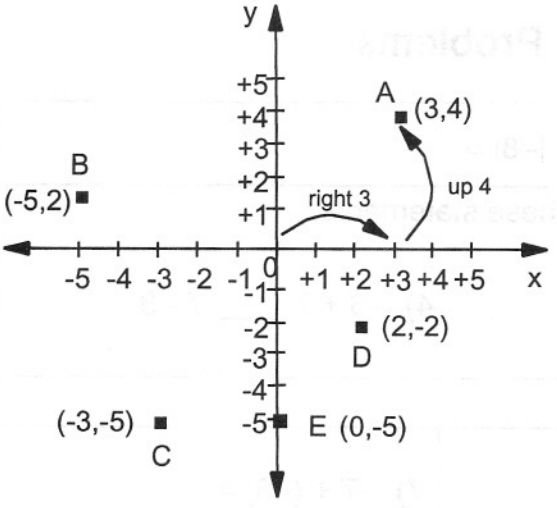


   Note: The circle over the 1 is open because x **cannot** equal 1.

2. **Coordinate graphs**

   A. A coordinate graph contains a horizontal number line (the **x-axis**) and a vertical number line (the **y-axis**).

   B. The x and y axes intersect at location (0,0) on the graph, which is called the **origin**.



   C. A point on a graph is located by the number of units it is from origin on the x-axis and the number of units it is from origin on the y-axis. Parentheses (x,y) locate a point on a graph.

   D. Look at points A - E on this graph.

   Point A (3,4) is located at right 3 and up 4.

   Point B (-5,2) is located at left 5 and up 2.

   Point C (-3,-5) is located at left 3 and down 5.

   Point D (2,-2) is located at right 2 and down 2.

   Point E (0,-5) is located at right 0 and down 5.

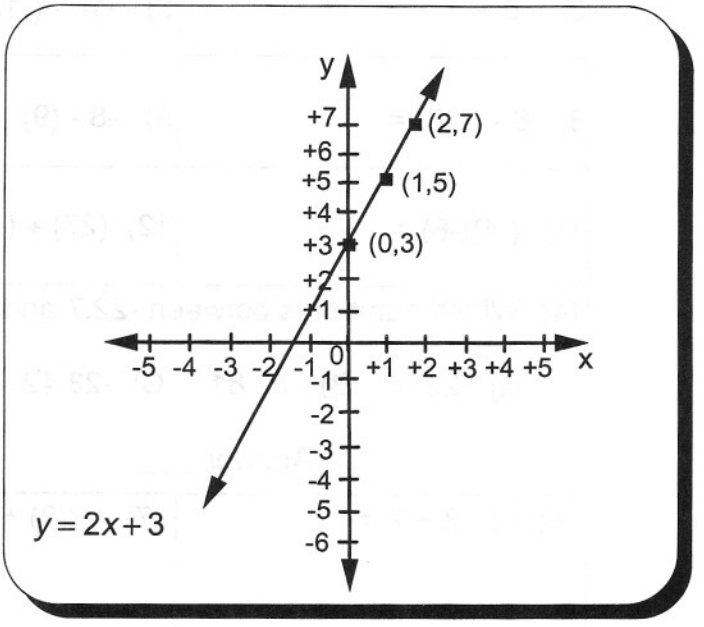
3. Graphing **linear** (straight line) equations

   A. Example: y = 2x + 3

      1. Pick 3 values for x
      2. Find the value of y for these x values.
      3. Plot and connect the points.

   B. y = 2x + 3 has been solved for x = 0, 1, and 2. The results are summarized with a table.

x	2x + 3 =	y	(x,y)
0	2(0) + 3 =	3	(0,3)
1	2(1) + 3 =	5	(1,5)
2	2(2) + 3 =	7	(2,7)



   C. In the equation y = 2x + 3, the number in front of x is called the **slope**. It represents the rate at which the line is increasing or decreasing. Here the slope is +2, which means y increases 2 units for every 1 unit that x increases. The line goes up to the right. Lines with a negative slope go down to the right.