

## GRAPHING LINEAR EQUATIONS

Linear equations are named as such because if we were to plot ALL of the solutions to a linear equation (remember, there are an INFINITE number of solutions to a linear equation!), the points would form a **LINE**.

The graph of a linear equation is a straight line.

example 1: Graph the equation  
 $x + y = 3$

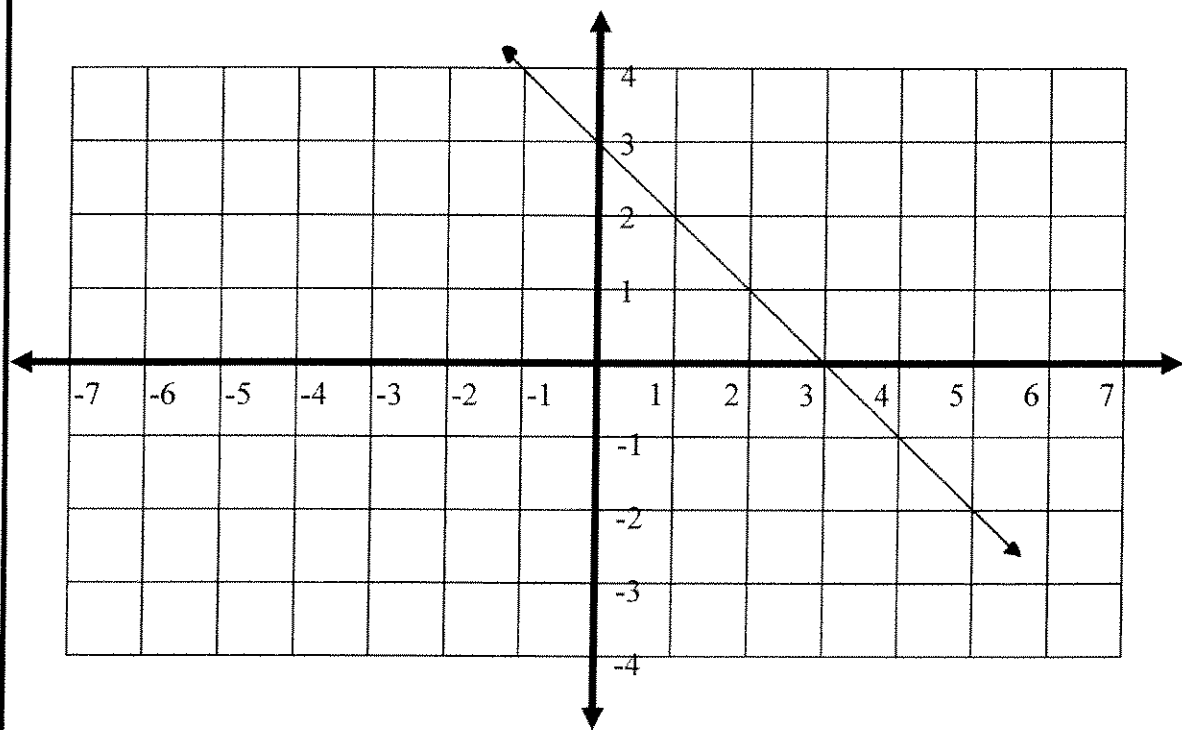
We start out by making a chart. We will choose any number for  $x$  and then find its corresponding  $y$  value.

$x$	$y$
3	
0	
-3	
1	
2	

Note: Always find at least 3 points when graphing linear equations.

NOW we plot these three points and connect the dots to form a line.

Every point that lies on this line is a solution to the equation  $x+y=3$ .



consider the line above. The point  $(3,0)$  is the **x-intercept** since that is the point where the line intersects the x axis. The point  $(0,3)$  is the **y-intercept** since that is the point where the line intersects the

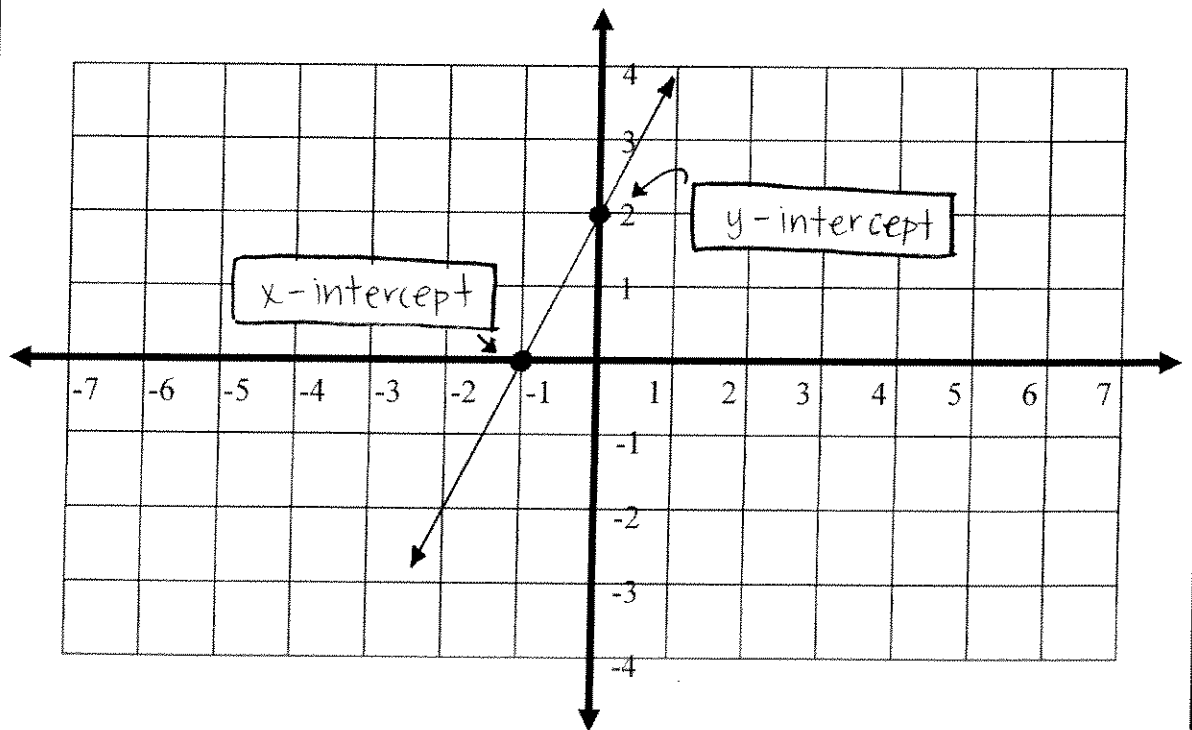
y axis.

One method of graphing linear equations is to find the x and y intercepts.

To find the x-intercept plug in zero for y and solve for x.

To find the y-intercept plug in zero for x and solve for y.

consider the graph of  $-2x + y = 2$  below.

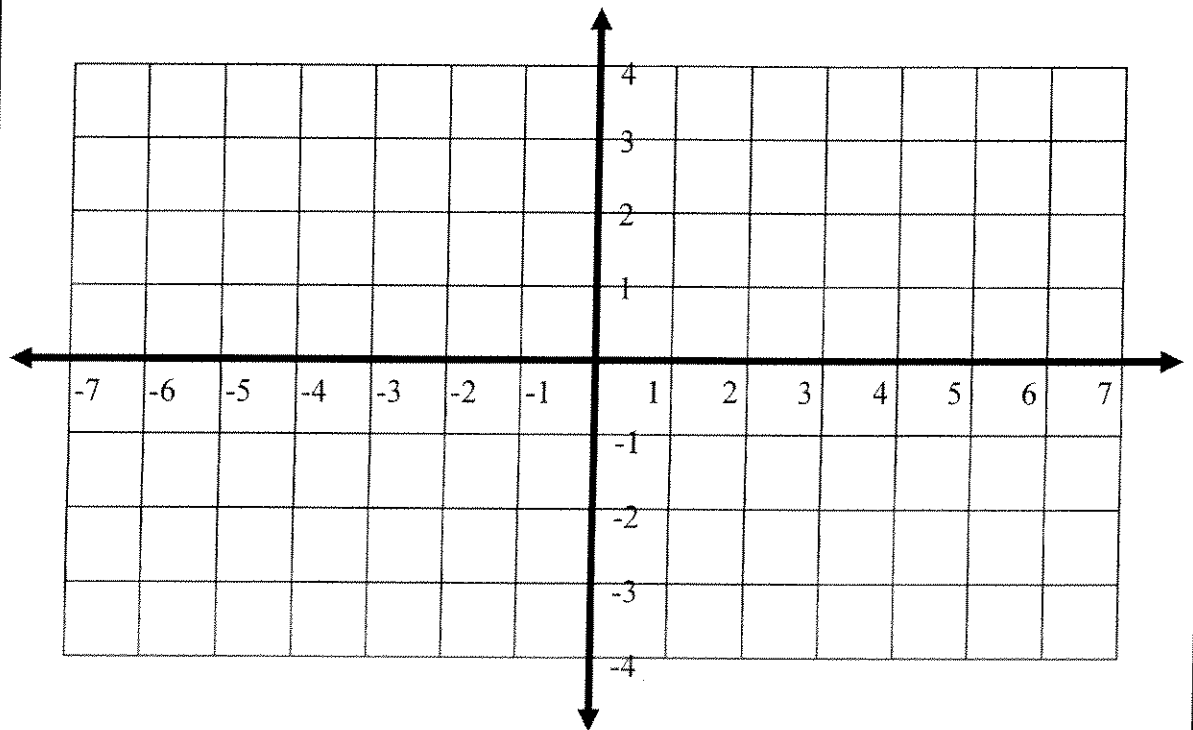
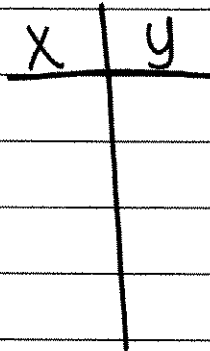






EXAMPLE 4:

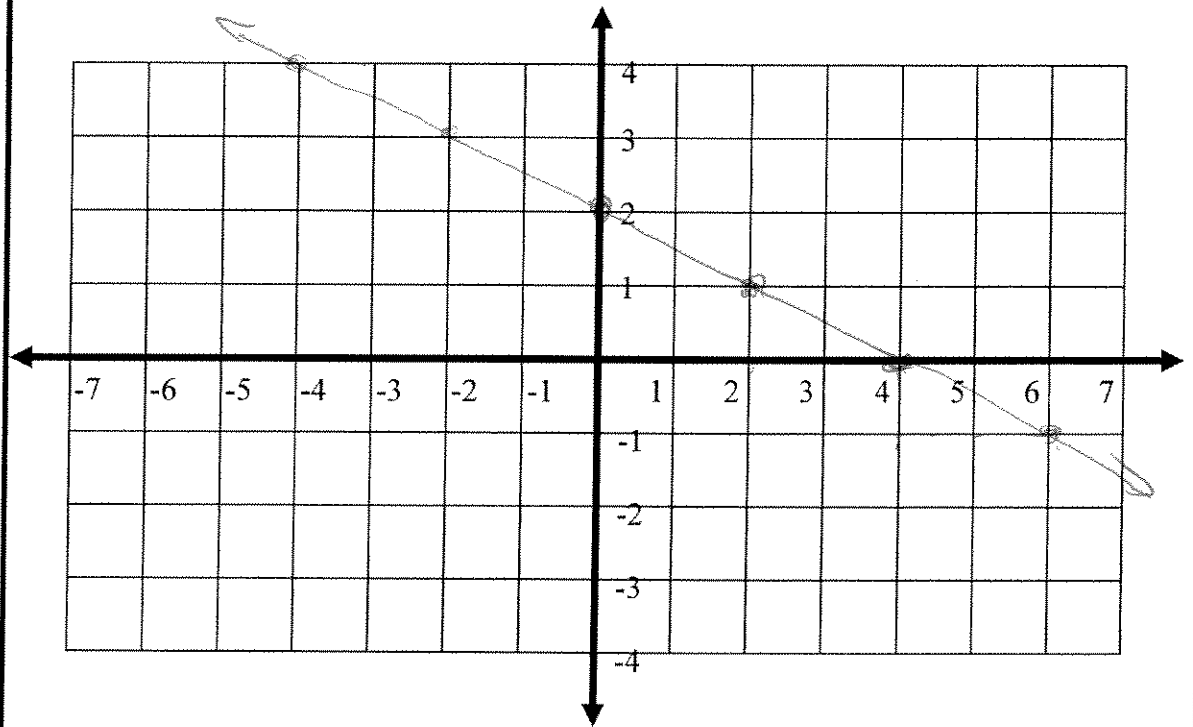
Graph the line  $x - y = 3$   
on the grid below.



# Graphing linear equations practice problems

1. Graph the line

$$y = -\frac{1}{2}x + 2$$



2. What is the x intercept of the line above? the y intercept?