

# Graphing Linear Equations

## Procedure

1. Solve the equation for  $y$
2. Make an  $x$ - $y$  chart
3. Pick convenient values of  $x$  and find corresponding  $y$ 's
4. Write those as ordered pairs and plot on the coordinate plane
5. Draw line through the points

## Example 1

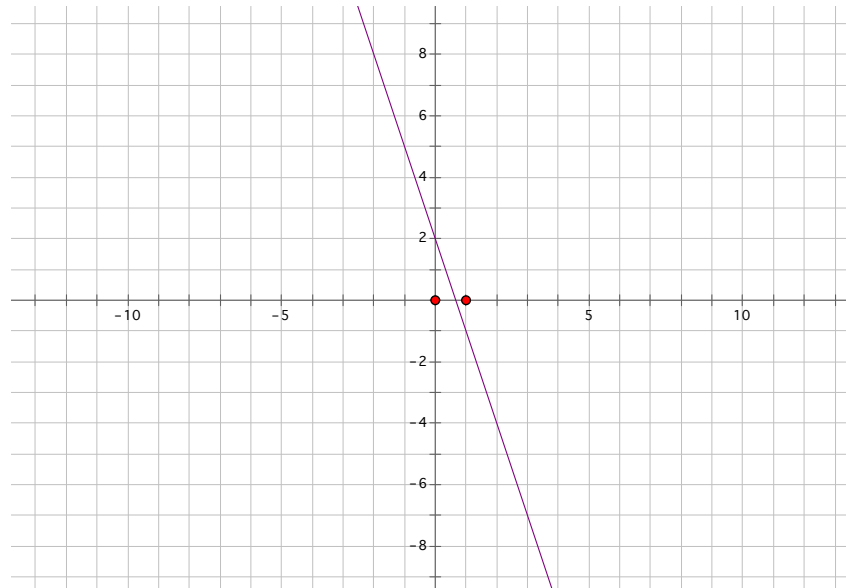
## Graph $3x + y = 2$

x	y
0	2
2	-4
-1	5

Solving for y, I subtract  $3x$  from both sides.  $y = 2 - 3x$ .

Which I could rewrite, using the Commutative Property as,  $y = -3x + 2$

Always pick convenient values for x, then find the corresponding y value.



## Example 2

Graph  $x - 3y = 8$

x	y
0	$-8/3$
8	0
5	-1

Again, I solve for y in terms of x

$$x - 8 = 3y \quad \text{or} \quad \frac{x-8}{3} = y$$

$$y = \frac{x}{3} - \frac{8}{3} \quad \text{or} \quad y = \frac{1}{3}x - \frac{8}{3}$$

Pick **convenient** values for x and find the corresponding y's. **Convenient** values normally include 0. When you have fractions, **convenient** values will be the denominator and multiples of the denominator.

The ordered pairs  $(0, -\frac{8}{3})$ ,  $(8, 0)$ , and  $(5, -1)$  represent the points on the graph.

