4.2: Graph Linear Equations

Goals: *Use a table to graph a linear equation
*Graph horizontal and vertical lines
*****Choose appropriate *x* values

Linear equation:

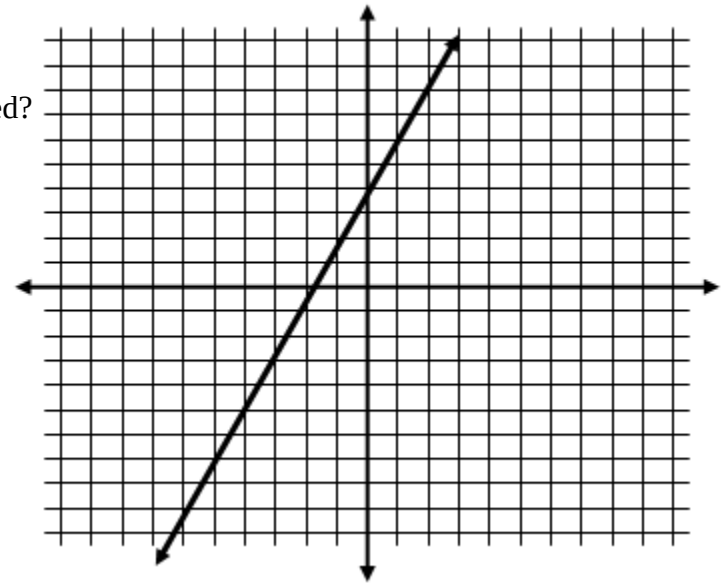
Solution:

Ex: Which ordered pair is a solution to: $3x - y = 7$**;** (3, 4) or (1, –4)? Explain

Ex: Tell whether $\left(4, -\frac{1}{2}\right)$ is a solution to $x + 2y = 5$. Why or why not.

Ex: Are the following points solutions to the linear equation represented by the line graphed?

a) (1, 6)
b) (–3, 2)



Graph a linear equation by making a table:

****MAKE SURE EQUATION IS IN _____ FORM!**

1. Rewrite the equation so it is in function form, which means to isolate _____

Ex: $-2x + y = -3$

2. Choose 5 appropriate values for *x*. Typically these values are:

***You should not choose these five values in two cases:**

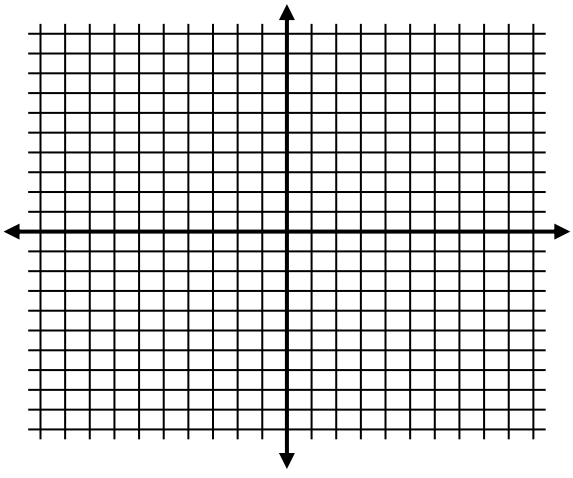
1.

2.

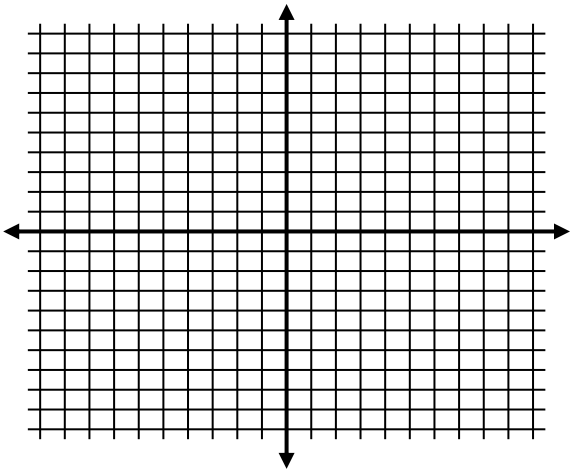
3. Plug your 5 values into the function for *x*, find out what *y* is for each to complete your table.

4. Graph the ordered pairs you now have from your table.

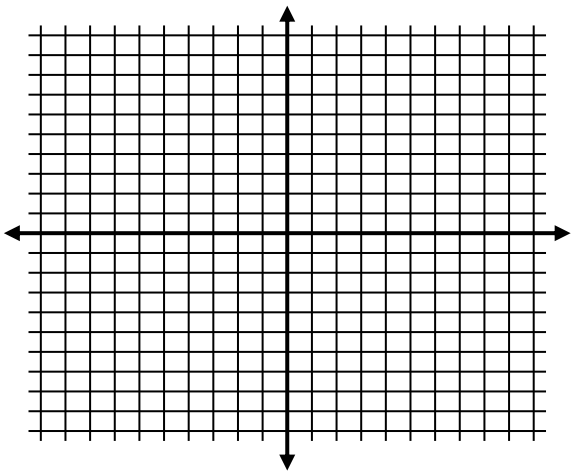
Ex: Graph $y = 2 - 2x$



Ex: Graph $y + 3x = 2$

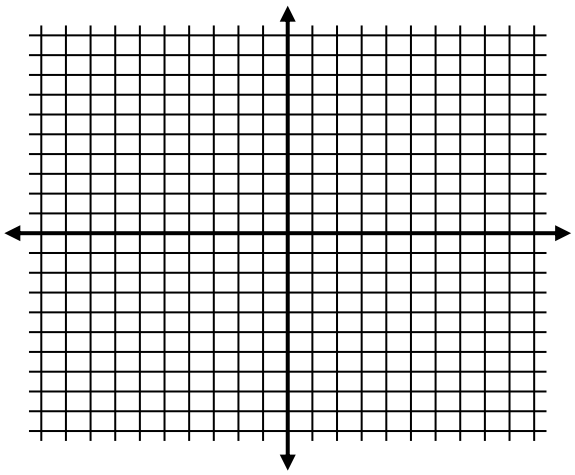


Ex: Graph $y = -3x + 1$ with a domain of $x \geq 0$ *which values can you **not** choose for x? Why?

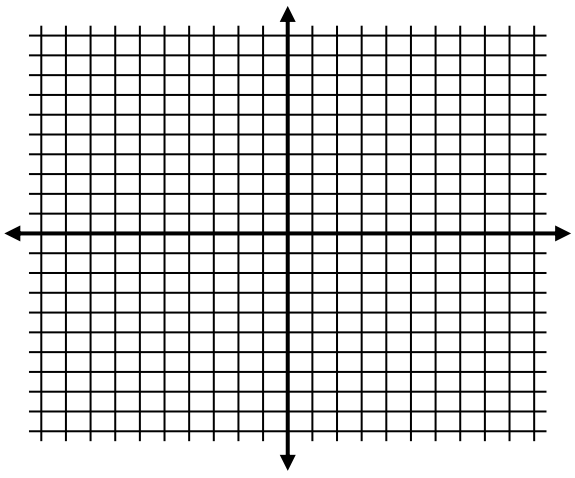


***Identify the range…**

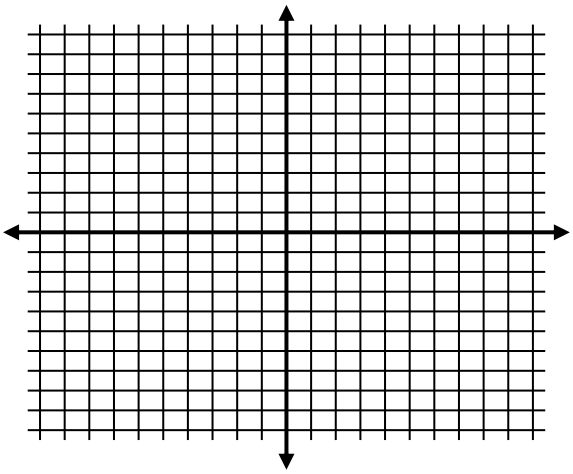
Ex: Graph $y = -\frac{1}{2}x + 4$ **which values should you pick for x? Why?



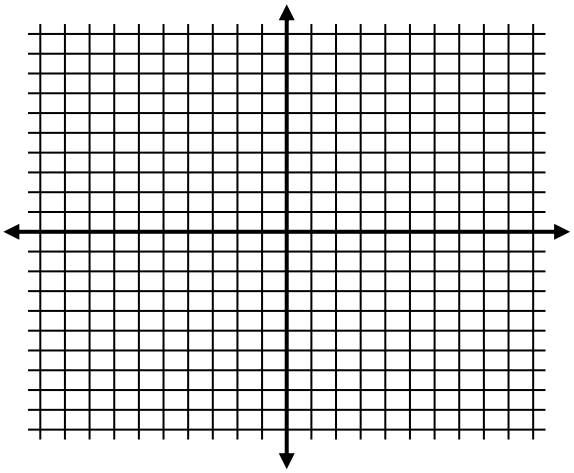
Ex: Graph $y = \frac{2}{3}x - 1$ with a domain of $x \leq 0$ then identify the range.



Ex: Graph $y = -3$



Ex: Graph $x = 4$



Ex: The distance, d, in miles, that a runner travels is given by the function $d = 6t$ where t is the time (in hours) spent running. The runner plans to go for a 1.5 hour run. Set up a table and identify the domain and range of the function. Choose at least 4 values for t.

Ex: Suppose the same runner decides he wants to run 12 miles. Set up a new table with at least 3 values and identify the new domain and range.

Ex: For gas that costs \$2 per gallon, the equation $C = 2g$ gives the cost, C, in dollars for g gallons of gas. You plan to pump \$10 worth of gas. Set up a table and identify the domain and range.