Name:_____ Date:_____

Notes
Algebra Section 4.2
Pages 215-221

Goal: "You will use a table to graph a linear equation"
"You will graph horizontal and vertical lines"
"Choose appropriate *x* values"

Vocabulary

Linear Equation: Any _____whose graph is a _____ line. Linear equations can be written in the form _____, which is called "_____ _____". In this form, both A and B _____ be _____.

Solution: **Any _____ _____ (x,y) that makes the _____true when substituted.

** Any _____ on the line

** Note: Since a _____ continues on _____ in _____ _____, and there are _____ points on a line, then a _____ _____ has _____ _____.

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

$(3,4)$

x=
y=

Plug x and y into the equation.

$3x - y = 7$

$(1,-4)$

x=
y=

Plug x and y into the equation.

$3x - y = 7$

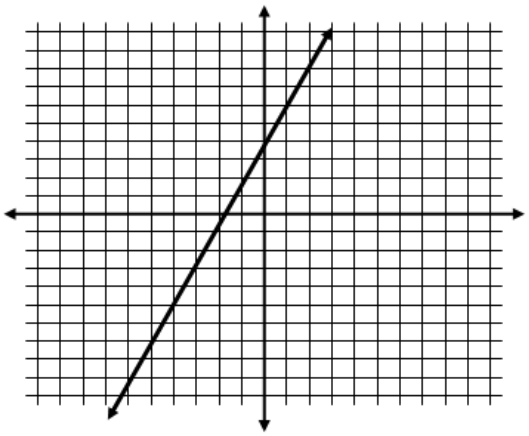
Which one is a solution to the equation? _____

Try These:
1) Which ordered pair is a solution to: $2x - 6 = 3y$; (3,-2) or (0,-2)?

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

3) Are the following points solutions to the linear equation represented by the line graphed?

a) (1, 6)
b) (–3, 2)



4) List three ordered pairs that are solutions to the equation $3x - 5 = y$

5) If x is 5, what ordered pair is a solution to the equation $2x + 4y = 8$?

Graphing a linear equation by making a table:

Make sure the equation is in _____form!

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

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

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

**Do not choose these values if:

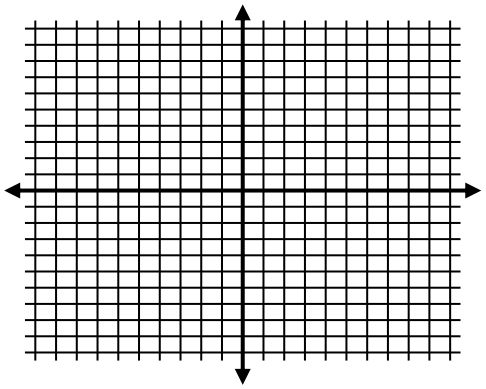
- There is a restriction on the _____. For example, if it says $x \geq 0$, then you must choose only _____ values, or if dealing with _____. Time cannot be _____.

-If after putting the equation in function form, the _____ of *x* is a _____, then it makes most sense to choose _____ of the _____ to avoid _____.

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

x	-2	-1	0	1	2
y					

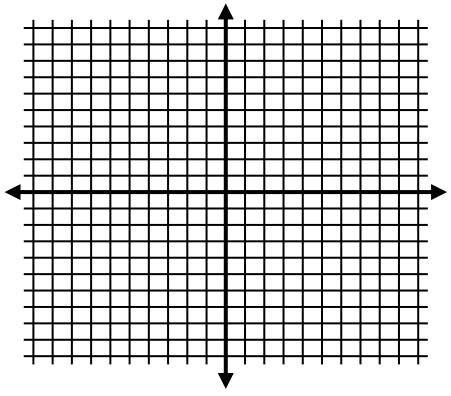
4) Graph the ordered pairs you now have from your table.



Try These:

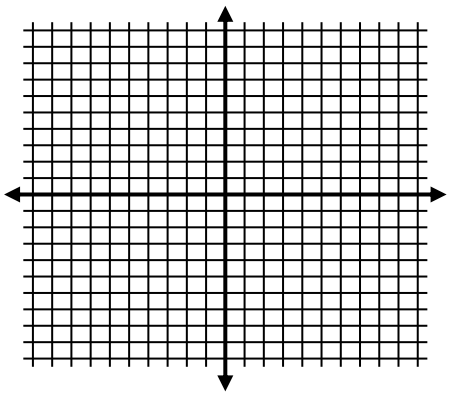
1) Graph $y = 2 - 2x$

x					
y					

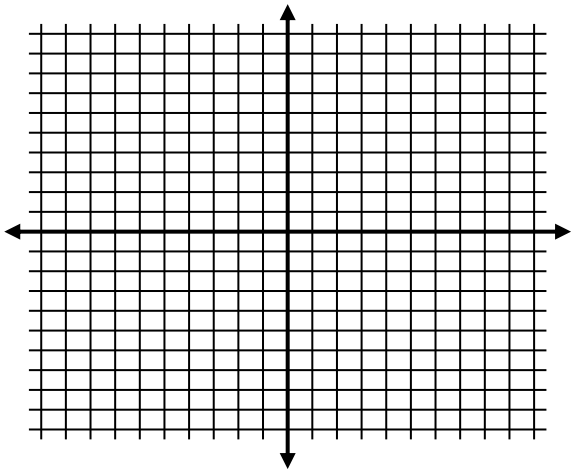


2) Graph $y + 3x = 2$

x					
y					



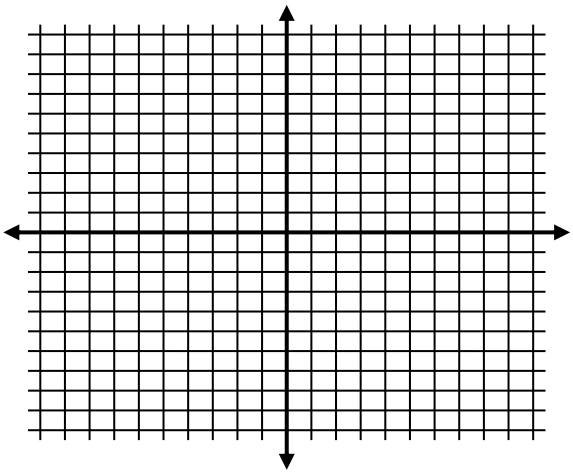
3) Graph $y = -3x + 1$ with a domain of $x \geq 0$ *which values can you **not** choose for x? Why?



x					
y					

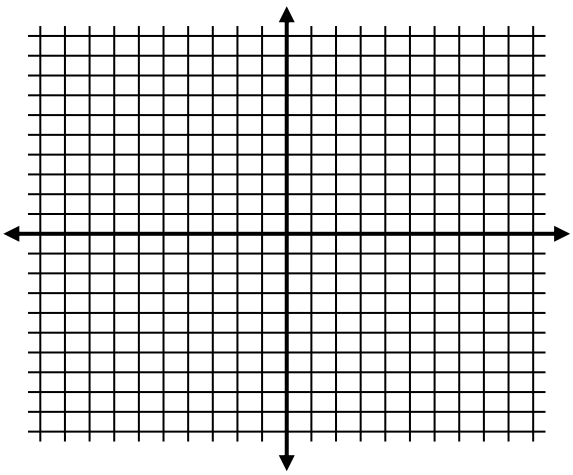
***Identify the range…**

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



x					
y					

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

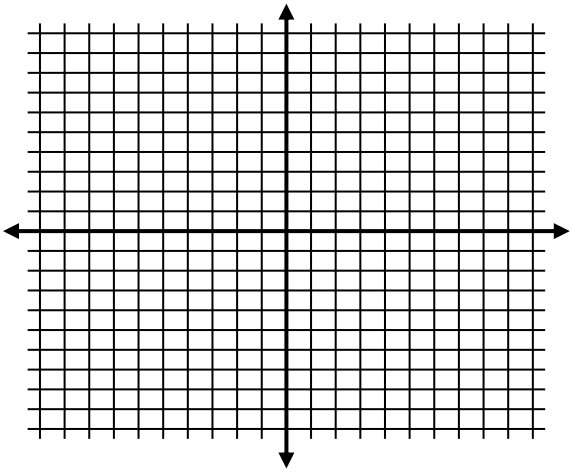


x					
y					

Range: _____

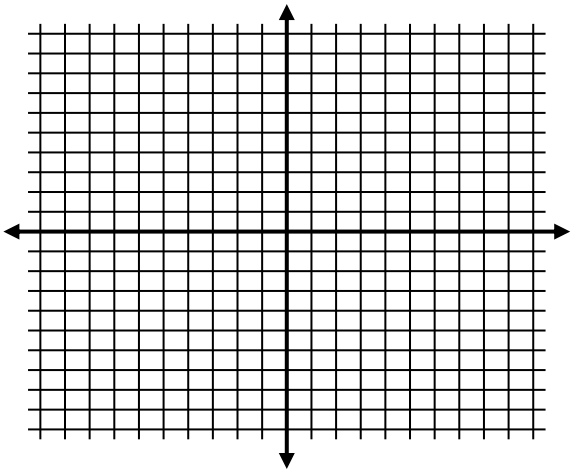
6) Graph $y = -3$

x					
y					



7) Graph $x = 4$

x					
y					



8) 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.

9) 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.

10) 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.