

- Graphing Relations

I. Using a table of values:

Using a Table of Values to Graph a Linear Relation Worksheet

Find the value of "y" in the following table(s) of values.

a) $y = x + 2$

x	y
0	2
1	3
2	4
3	5
4	6

b) $y = 2x + 1$

x	y
3	7
4	9
5	11
6	13
20	41

c) $y = 3x - 1$

x	y
8	
9	
10	
11	
25	

d) $y = 2x$

x	y
2	
3	
4	
5	
100	

e) $y = \frac{1}{2}x + 2$

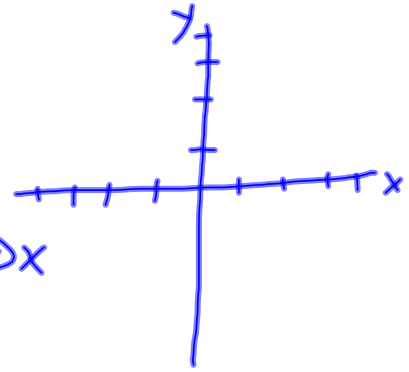
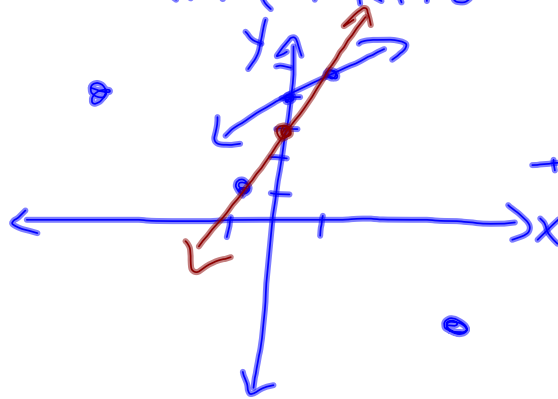
x	y
0	2
2	3
4	4
6	5
8	6

f) $y = \frac{1}{3}x - 3$

x	y
3	-2
6	-1
9	0
12	1

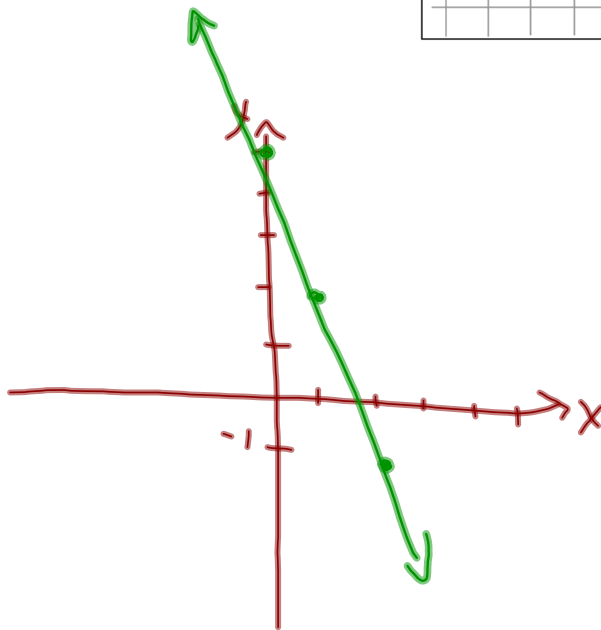
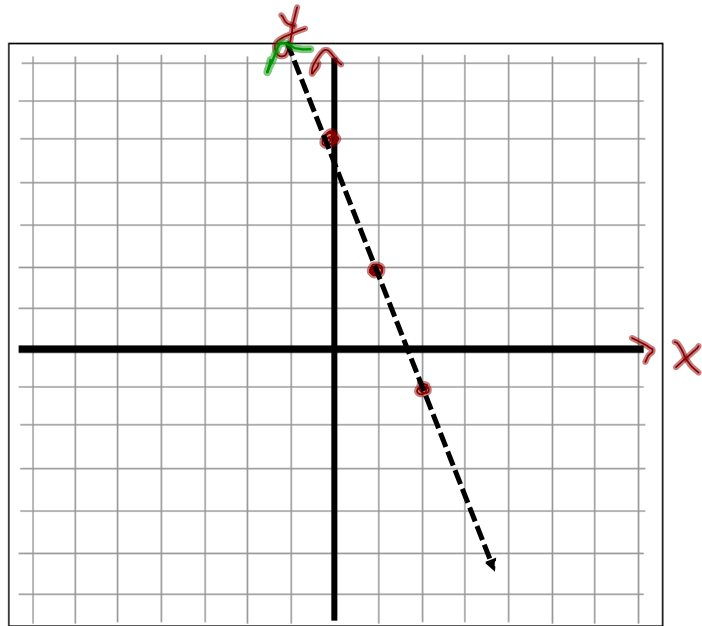
• Graph $y = 2x + 3$ → Linear (At least 2)

x	y
1	5
0	3
-1	1
3	



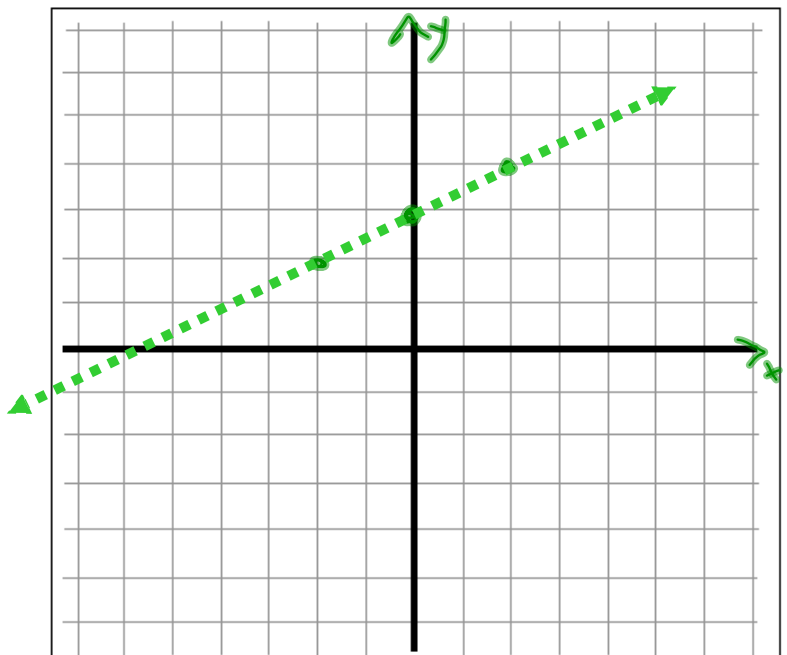
Graph the equation: $y = -3x + 5$

x	y
0	5
1	2
2	-1



Develop a table of values for the equation $y = .5x + 3$ and use your points to draw the graph

x	y
0	3
2	4
-2	2

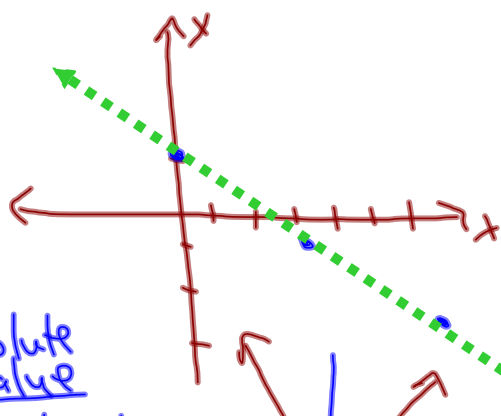


Graph each of the following:

$$y = -\frac{2}{3}x + 1 = -\frac{2}{3}(\cancel{3}) + 1$$

$$= -\frac{2}{3}(\cancel{6}) + 1$$

x	y
0	1
3	-1
6	-3



Absolute Value

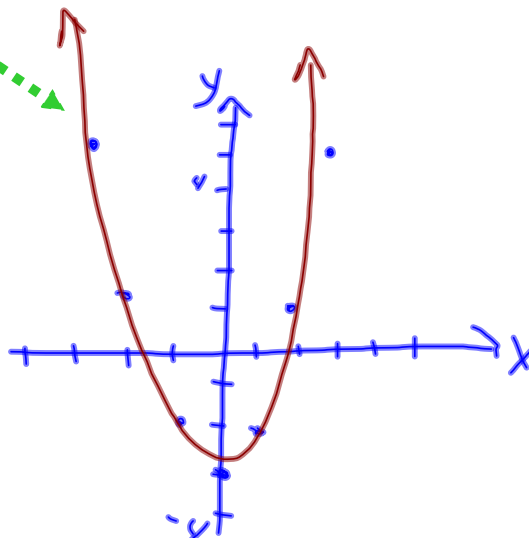
$$y = |x| \Rightarrow$$

$$|-8| = 8$$

$$|8| = 8$$

$$y = x^2 - 3 \quad (\text{use 7 points})$$

x	y
3	6
2	1
1	-2
0	-3
-1	-2
-2	1
-3	6



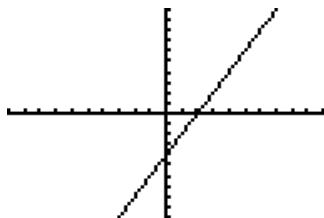
Now try sketching each of the following:

$$6x - 3y = 12$$

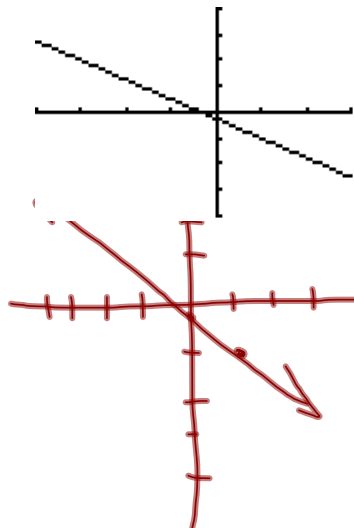
$$\frac{-3y}{-3} = \frac{12}{-3} - \frac{6x}{-3}$$

$$y = -4 + 2x$$

$$y = 2x - 4$$



What do you think would be a good first step to get these sketches started?



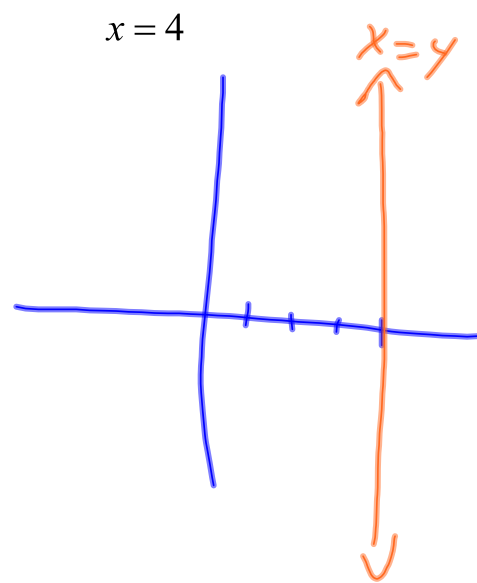
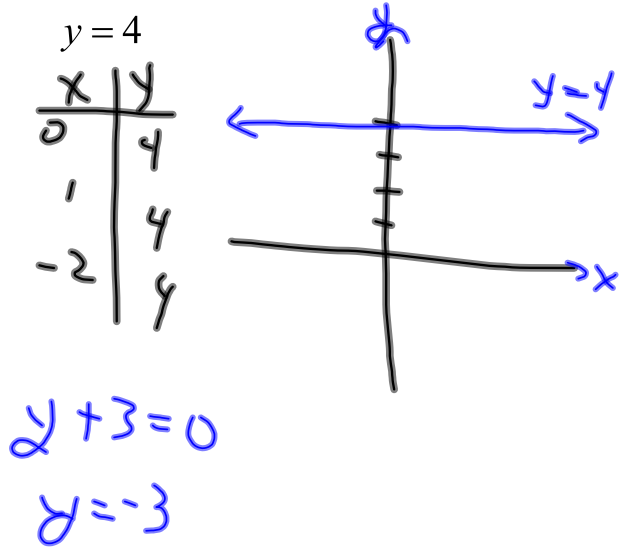
$$3x + 4y + 1 = 0$$

$$\frac{4y}{4} = \frac{-3x - 1}{4}$$

$$y = -\frac{3}{4}x - \frac{1}{4}$$

x	y
1	-1
0	$-\frac{1}{4}$

Here are a couple of SPECIAL CASES:



Finish the statements below:

Horizontal Lines will always ???

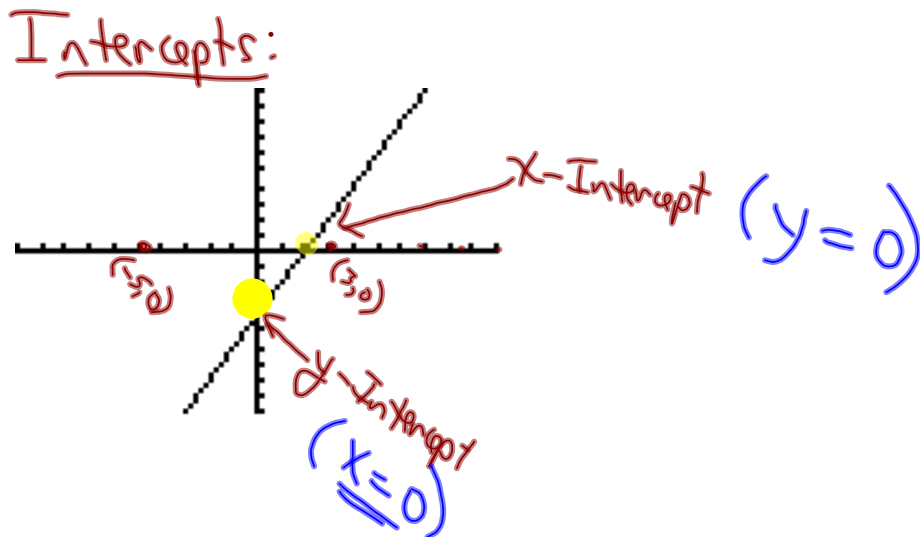
$$\text{Be } y = \text{Some Number} \\ (\text{Any})$$

Vertical Lines will always ???

$$\text{Be } x = \text{Any Number}$$

II. Graphing LINEAR relations using intercepts

Problem : Using intercepts, graph $4x + y = 4$ Problem : Using intercepts, graph $20x + 5y = 20$



ex. $4x + y = 4$

X-Int: $(y=0)$

$$4x + 0 = 4$$

$$\frac{4x}{4} = \frac{4}{4}$$

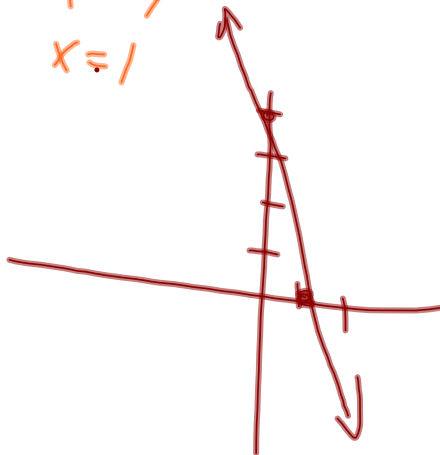
$$x = 1$$

y-Int: $(x=0)$

$$4(0) + y = 4$$

$$0 + y = 4$$

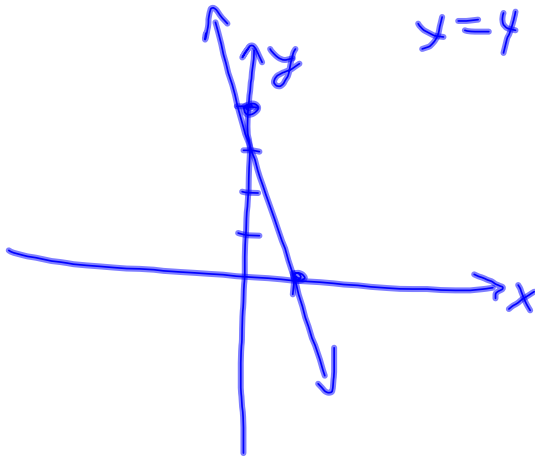
$$y = 4$$



Problem : Using intercepts, graph $20x + 5y = 20$

$$\begin{aligned} \underline{x\text{-Int. (}y=0)} \\ 20x &= 20 \\ x &= 1 \end{aligned}$$

$$\begin{aligned} \underline{y\text{-Int. (}x=0)} \\ 5y &= 20 \\ y &= 4 \end{aligned}$$



Practice Problems...

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#3, 4, 5, 6, 10, 11, 14, 16, 19,