#59

Name Key
8A; Algebra 1

Date _____
Period _____

How do we graph a linear equation using a table

I. Graph the linear equation y = 3x - 2 by setting up a table of values using your graphing calculator.

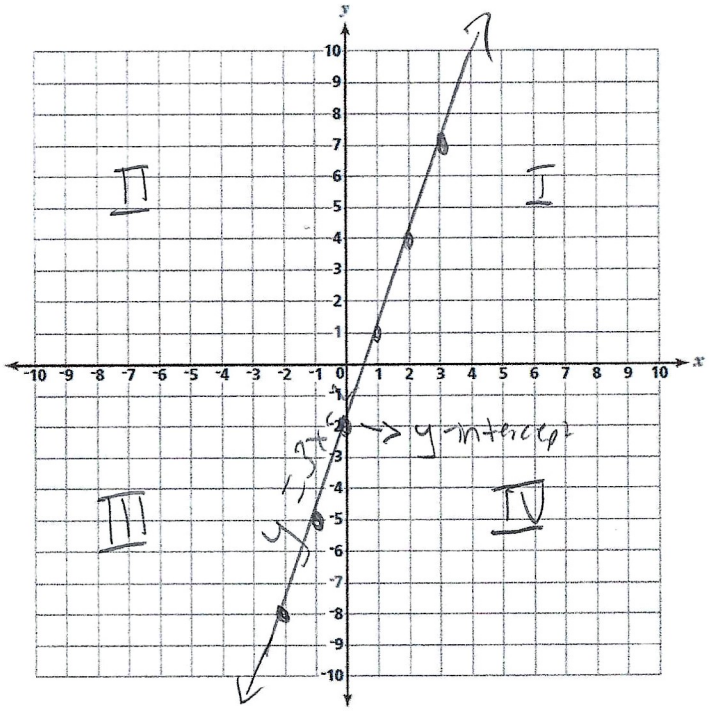
Domain / Input — Range / output — ✱ coordinates MUST have ( ) around them

x	+3 Pattern y	(x,y)
-3	-11	(-3, -11)
-2	-8	(-2, -8)
-1	-5	(-1, -5)
0	-2	(0, -2)
1	1	(1, 1)
2	4	(2, 4)
3	7	(3, 7)

↔ ↕ — what you graph

**The Domain (x-value) is always $\{-3 \le x \le 3\}$ unless stated otherwise

*This is a function because every input only has 1 output



Steps to graph:

1) Plot the points
2) Connect the points
3) Extend the lines through the graph
4) Draw arrows on the ends of the lines
5) Write the equation on the line

Calculator steps:

*To get the table: y= 3x - 2 2nd Graph

*Press Graph to see a picture of the graph

*Zoom 6:Standard to see all 4 Quadrants

*To clear the calculator: 2nd + 7 1 2

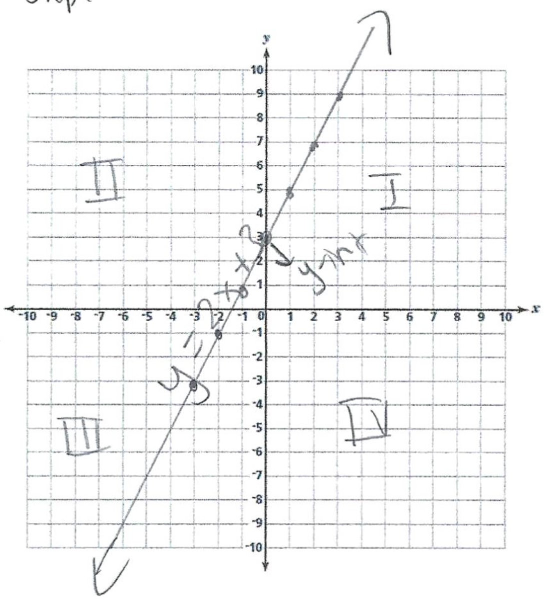
Domain: $\{-3 \le x \le 3\}$

II. Practice Examples:

1) Create a table of values to graph the linear equation $y = 2x + 3$

(slope: 2; y-intercept: 3)

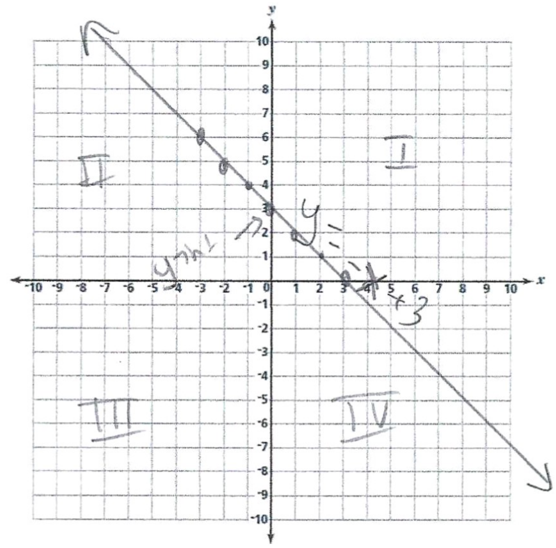
x	y
-3	-3
-2	-1
-1	1
0	3
1	5
2	7
3	9



2) Create a table of values to graph the linear equation $y = -x + 3$

(slope: -1; y-int: 3)

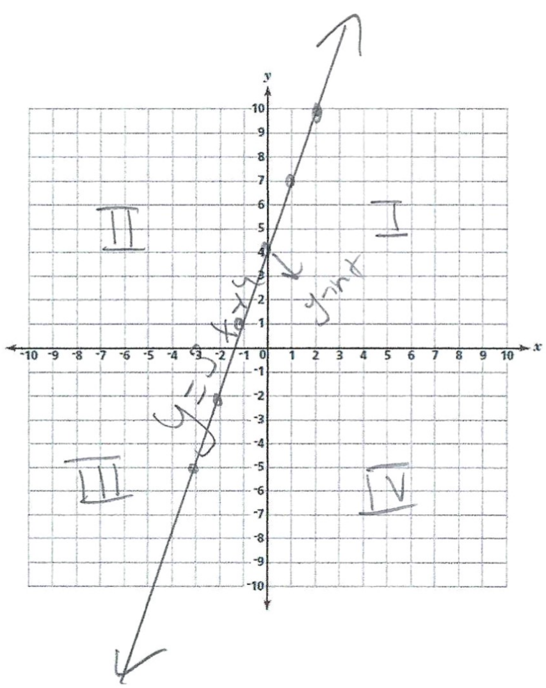
x	y
-3	6
-2	5
-1	4
0	3
1	2
2	1
3	0



3) Create a table of values to graph the linear equation $y = 3x + 4$

(slope: 3; y-int: 4)

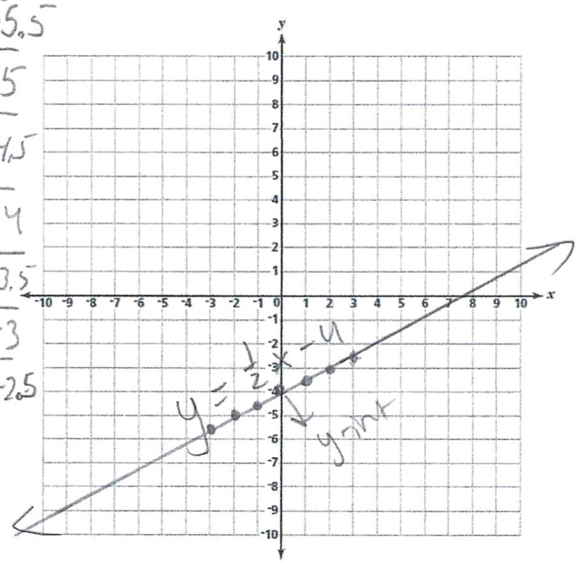
x	y
-3	-5
-2	-2
-1	1
0	4
1	7
2	10
3	13



4) Create a table of values to graph the linear equation $y = \frac{1}{2}x - 4$

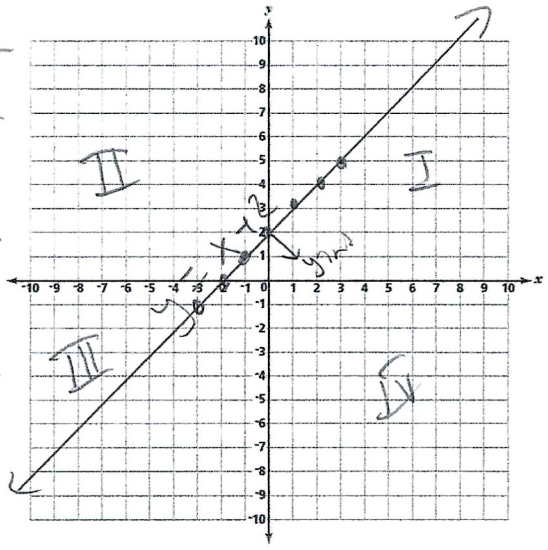
(slope: $\frac{1}{2}$; y-int: -4)

x	y
-3	-5.5
-2	-5
-1	-4.5
0	-4
1	-3.5
2	-3
3	-2.5



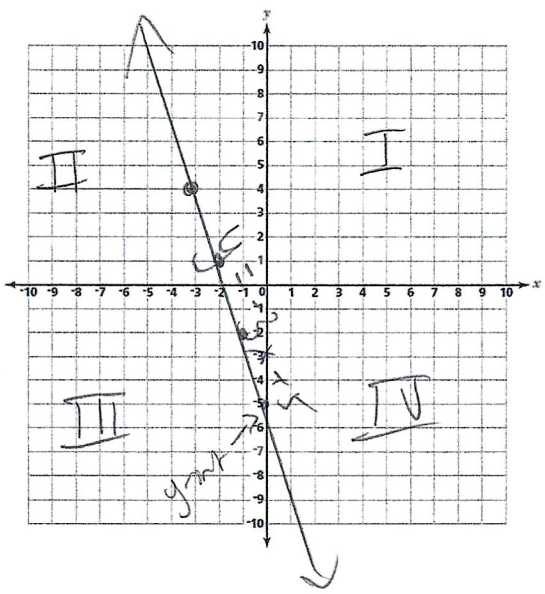
5) Create a table of values to graph the linear equation $y = 1x + 2$ (1 = slope, 2 = y-int)

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



6) Create a table of values to graph the linear equation $y = -3x - 5$ (-3 = slope, -5 = y-int)

x	y
-3	4
-2	1
-1	-2
0	-5
1	-8
2	-11
3	-14



7) Is (-3,31) a solution of the equation $y = -7x + 10$

x y

$y = -7x + 10$

$31 = -7(-3) + 10$

$31 = 21 + 10$

$31 = 31$

yes, (-3,31) is a solution because it satisfies the equation.

8) Is (7,59) a solution of the equation $y = -7x + 10$

x y

$y = -7x + 10$

$59 = -7(7) + 10$

$59 = -49 + 10$

$59 \neq -39$

No, (7,59) is <u>not</u> a solution because it <u>does not</u> satisfy the equation

9) Use the equation $y = 2x - 4$ to solve for the y-value in (-3, y)

x y

$y = 2x - 4$

$y = 2(-3) - 4$

$y = -6 - 4$

$\boxed{y = -10}$

10) Use the equation $y = 2x - 4$ to solve for the y-value on (50, y)

x y

$y = 2x - 4$

$y = 2(50) - 4$

$y = 100 - 4$

$\boxed{y = 96}$