Key

Algebra 1

3.4 Notes-Day 2

Graphing Functions

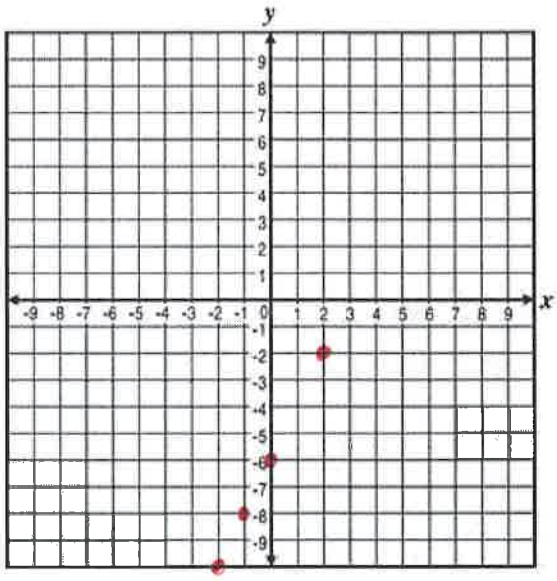
Warm Up: Graph the function for the given domain.

$2x - y = 6$; $D = \{-2, -1, 0, 2\}$

$-2x \quad -2x$

$\frac{-y}{-1} = \frac{-2x}{-1} + \frac{6}{-1}$

x	$y = 2x - 6$	y	(x, y)
-2	$2(-2) - 6$ $-4 - 6$	-10	(-2, -10)
-1	$2(-1) - 6$ $-2 - 6$	-8	(-1, -8)
0	$2(0) - 6$ $0 - 6$	-6	(0, -6)
2	$2(2) - 6$ $4 - 6$	-2	(2, -2)



If the domain of a function is all real numbers, any number can be used as an input value.
You can use the table function on your calculator to make a table of values.

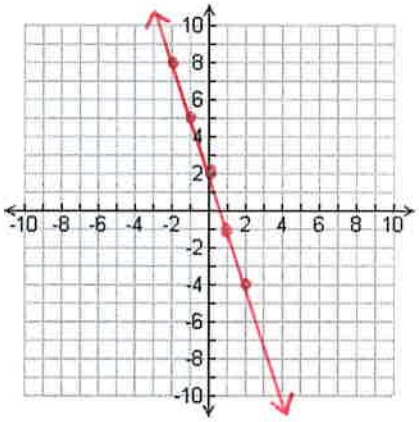
Steps to make a table on the calculator.

1.) Solve the equation for y.
2.) Enter the equation in [y =]
3.) To view your table, [2nd] [Graph]
4.) Scroll up and down to see all of the table values.

Graph each function by making a table of values on your calculator.

Ex 1: Graph $-3x + 2 = y$ $y = -3x + 2$

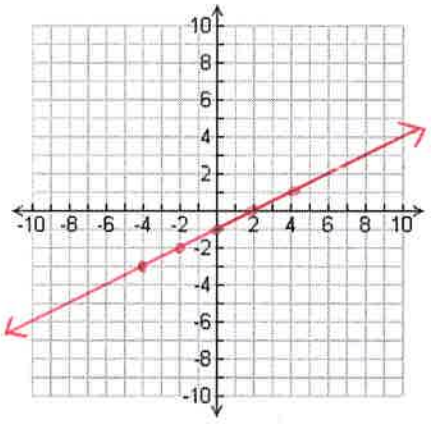
x	y
-2	8
-1	5
0	2
1	-1
2	-4



D: ℝ
R: ℝ

Ex 2: Graph $y = \frac{1}{2}x - 1$

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



D: ℝ
R: ℝ

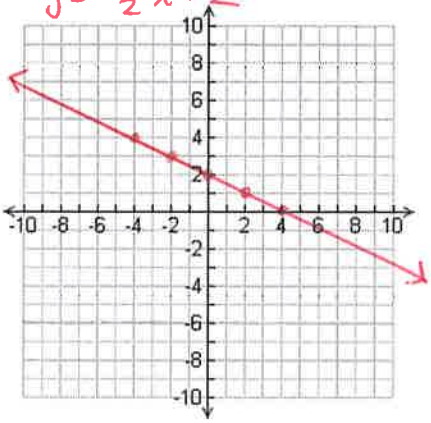
Ex 3: Graph $2x + 4y = 8$

$-2x \quad -2x$

$\frac{4y}{4} = \frac{-2x}{4} + \frac{8}{4}$

$y = -\frac{1}{2}x + 2$

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



D: ℝ
R: ℝ

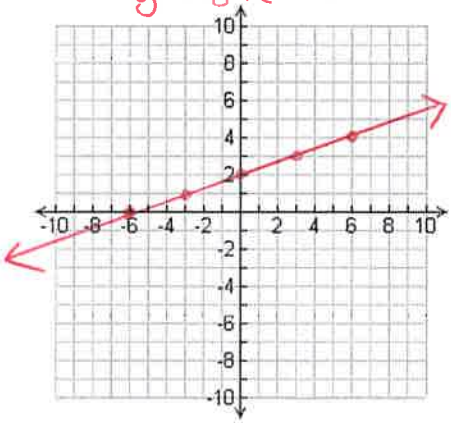
Ex 4: Graph $x - 3y = -6$

$-x \quad -x$

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

$y = \frac{1}{3}x + 2$

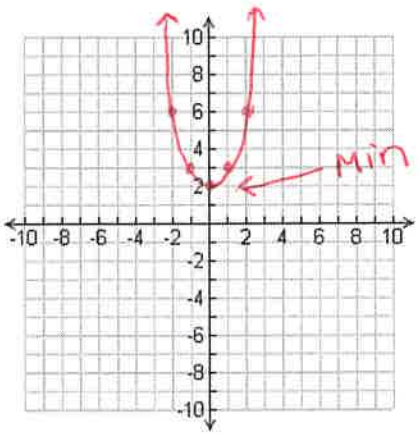
x	y
-6	0
-3	1
0	2
3	3
6	4



D: ℝ
R: ℝ

Ex 5: Graph $f(x) = x^2 + 2$

x	f(x)
-2	6
-1	3
0	2
1	3
2	6

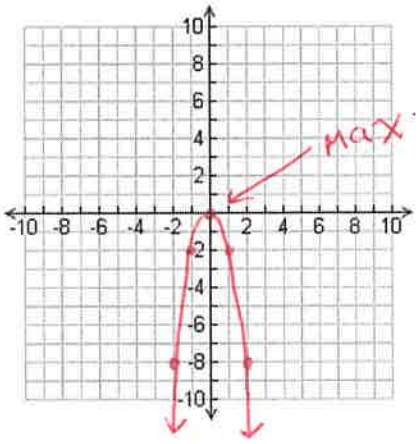


D: $\mathbb{R}$

R: $y \geq 2$

Ex 6: $f(x) = -2x^2$

x	y
-2	-8
-1	-2
0	0
1	-2
2	-8



D: $\mathbb{R}$

R: $y \leq 0$

Keystone Constructed Response

Example 1:

Olivia bought a houseplant that was 8 inches tall. It began growing taller at a rate of 2 inches every 3 months.

A Let h represent the plant's height in inches t months after Olivia bought it. Complete the table below to show the values of h for $t = 0, 3, 6, 9$, and 12.

t	h
0	8
3	10
6	12
9	14
12	16

B Write an equation that describes the relationship between t and h.

$h = \frac{2}{3}t + 8$

C Use your equation to find how many months it will take the plant to reach a height of 21 inches. Show your work.

$21 = \frac{2}{3}t + 8$

$-8 \qquad -8$

$\frac{3}{2} \cdot 13 = \frac{2}{3}t \cdot \frac{3}{2}$

$19.5 = t$

19.5 months