Lesson 3-4

GRAPHING WITH THE CALCULATOR

Graph: 3x – y = 4

Step 1: Enter the equation in the Y= list

- The Y= list shows the equation or equations that you will graph.
- Equations must be entered with the y isolated on one side of the equation. Solve the equation for "y" then enter it into the calculator in the Y = list.

<div>

$$3x - y = 4$$
$$\underline{-3x \qquad -3x} \qquad \text{(subtract 3x from both sides)}$$
$$\underline{-y = -3x + 4}$$
$$-1 \quad -1 \quad -1 \quad \text{(divide everything by -1)}$$

$$y = 3x - 4 \quad \rightarrow \text{the equation is solved for "y"}$$
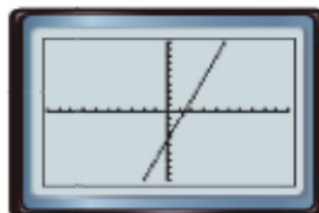
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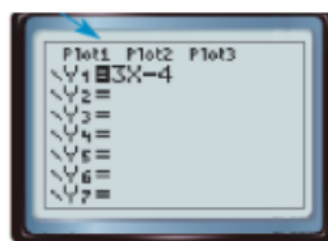
next to alpha button
↑

KEYSTROKES: Y= 3 X,T,θ,n — 4

x ↵subtract

Step 2: Select the "Graph" button to see the equation.

Step 3: You can get ordered pairs to plot on the coordinate plane by selecting 2nd function key and table.

x	y
0	-4
1	-1
2	2

Graph each equation using a graphing calculator. Select at least 5 ordered pair from the calculator and record them in an x, y table.
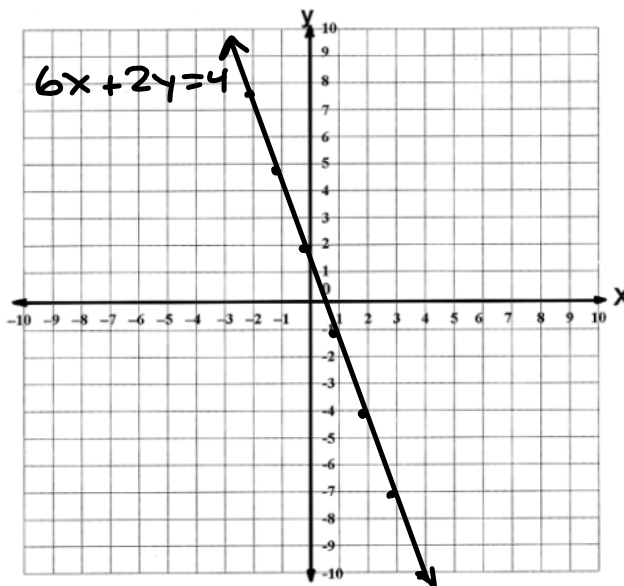
Solve for y

1. $6x + 2y = 4$

$6x + 2y = 4$
$-6x \quad \downarrow \quad -6x$

$\dfrac{2y}{2} = \dfrac{-6x}{2} + \dfrac{4}{2}$

$\boxed{y = -3x + 2}$

x	y
-2	8
-1	5
0	2
1	-1
2	-4
3	-7
4	-10

$6x + 2y = 4$

$y = mx + b$

2. $-3x - 5y = 6$

Given

$-3x - 5y = 6$
$+3x \quad \downarrow \quad +3x$

$\dfrac{-5y}{-5} = \dfrac{3x}{-5} + \dfrac{6}{-5}$

$\boxed{y = -0.6x - 1.2}$

$m = -0.6 \qquad b = -1.2$

$\dfrac{-6}{10} \quad \dfrac{rise}{run}$

x	y
-7	3
-2	0
3	-3
8	-6

$-3x - 5y = 6$

3. $-x + 3y = 6$

x	y
-6	0
-3	1
0	2
3	3
6	4
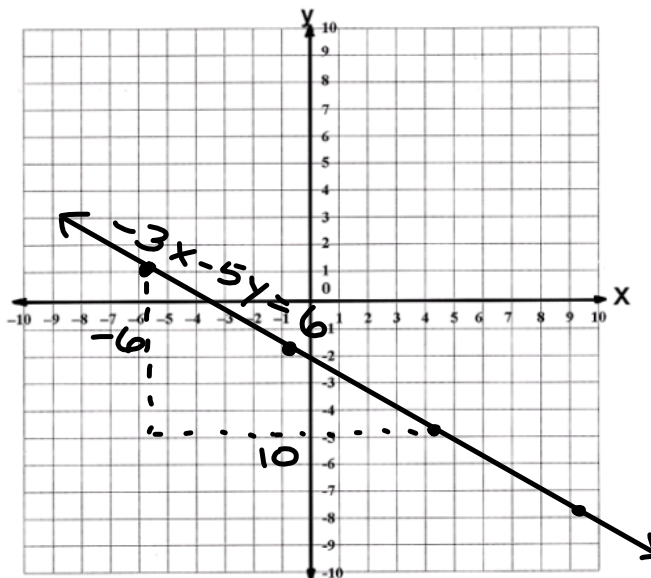
$$-x + 3y = 6$$
$$+x \qquad +x$$
$$\frac{3y}{3} = \frac{1x}{3} + \frac{6}{3}$$
$$\boxed{y = \tfrac{1}{3}x + 2}$$

$-x + 3y = 6$
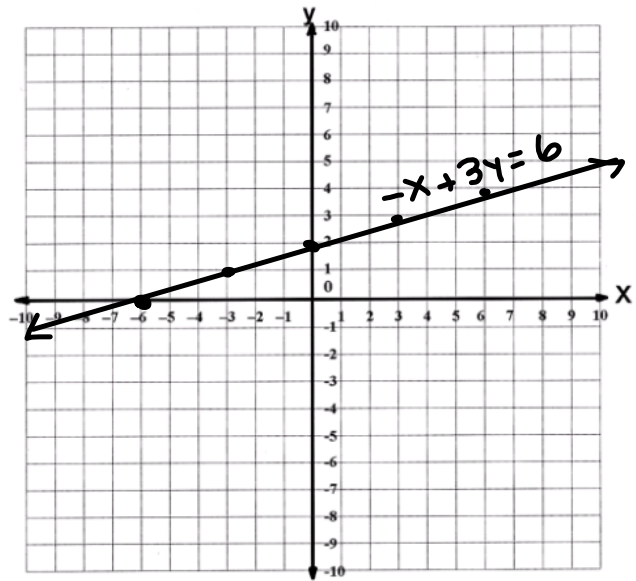
4. $x + y = -4$

x	y

INDEPENDENT WORK

3
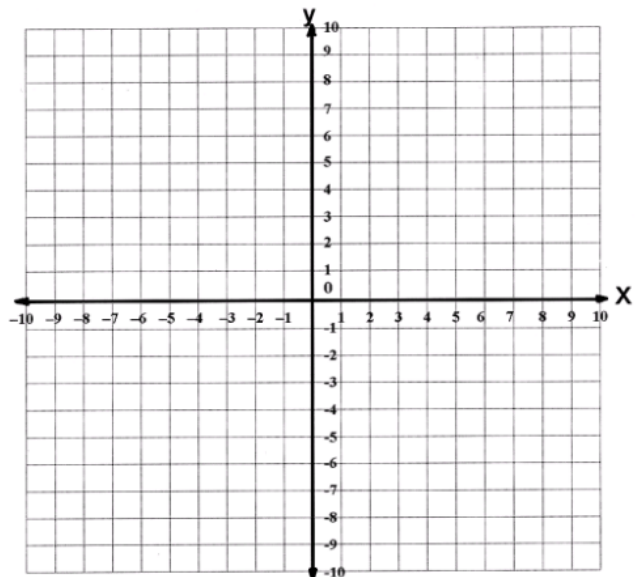
3-4

MID-SECTION 3-4 WARM UP

Rearrange each equation so that it is in
Slope-Intercept Form
$(y = mx + b)$
Then, state the slope and y-intercept for each.

$4x + 2y = 16$
$-4x \quad \downarrow \quad -4x$

$$\frac{2y}{2} = \frac{-4x}{2} + \frac{16}{2}$$

$$y = -2x + 8$$
$$y = mx + b$$

$$m = slope = -2$$
$$b = y\text{-}int = 8$$

$3x - 6y = 12$
$-3x \quad \downarrow \quad -3x$

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

$$y = 0.5x - 2$$
$$y = mx + b$$

$$m = 0.5 = \frac{1}{2}$$
$$b = -2$$

$5x = 15y - 30$
$+30 \quad \downarrow \quad +30$

$$5x + 30 = 15y$$

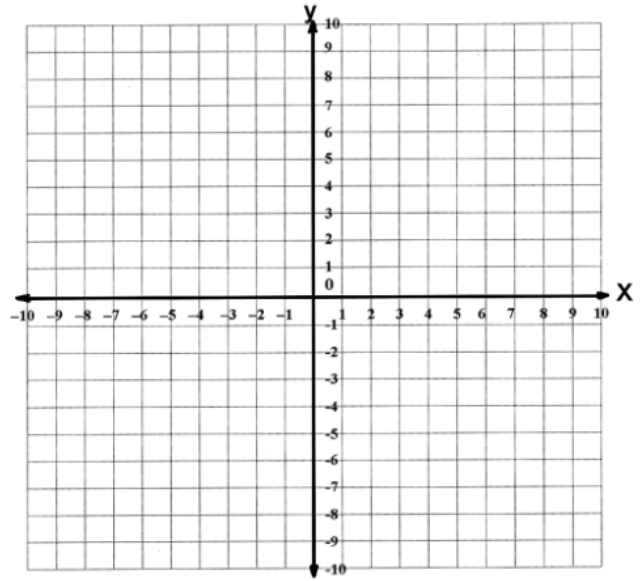$$\frac{15y}{15} = \frac{5x}{15} + \frac{30}{15}$$

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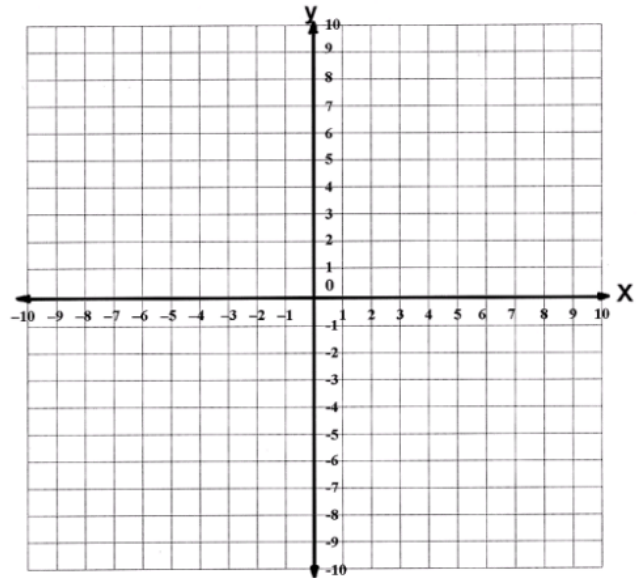
$$m = \frac{1}{3}$$
$$b = 2$$

15A

4

5. y = 9 – 4x

x	y

INDEPENDENT WORK

6. 3x + y = 5

x	y

INDEPENDENT WORK