STANDARD FORM OF AN EQUATION OF A LINE

STANDARD FORM

Standard form of a linear equation is written in the form of

$$Ax + By + C = 0$$

Graphing from standard form is trickier than graphing from slope, y-intercept form

SO…You can change a standard form equation into slope y-intercept form by rearranging the equation to look like __$y = mx + b$__ .

Example: Change $3x + 2y - 6 = 0$ to slope y-intercept form. What is the slope & y-int?

- Keep y term

- move x-term & constant term to other side

- Divide each term by # in front of y

$$\frac{2y}{2} = \frac{-3x}{2} + \frac{6}{2}$$

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

$$\text{slope} = \frac{-3}{2}$$

$$y\text{int} = 3$$

Rearrange the following equations from standard form to slope, y-intercept form.

a) $x + y - 3 = 0$

$$y = -x + 3$$

m= ~1   b= 3

b) $x - y = 0$

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

$$y = x$$

m= 1   b= 0

c) $-2x + 5y - 15 = 0$

$$\frac{5y}{5} = \frac{2x}{5} + \frac{15}{5}$$

$$y = \frac{2}{5}x + 3$$

m= $\frac{2}{5}$ b= 3

CHANGE FROM STANDARD FORM TO SLOPE Y-INTERCEPT FORM, THEN GRAPH
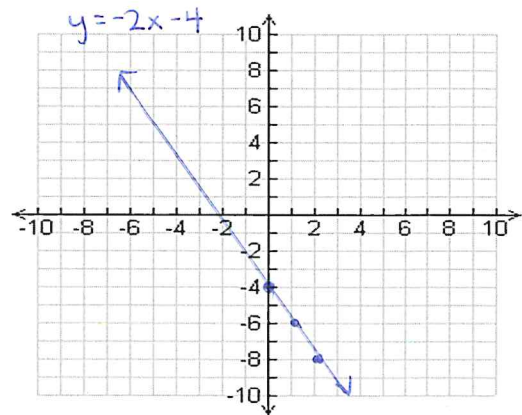
For each of the following questions:

a) Rewrite the standard form equation in Slope y-intercept form ($y = mx + b$) and

b) State the slope and y-intercept

c) Graph and label the line

1. $2x \boxed{+ y} + 4 = 0$

$$y = -2x - 4$$

Equation: $\underline{\quad y = -2x - 4 \quad}$

m = $\underline{\quad -2/1 \quad}$ b = $\underline{\quad -4 \quad}$

$y = -2x - 4$

2. $-3x \boxed{- y} - 6 = 0$

$$\frac{-y}{-1} = \frac{3x}{-1} + \frac{6}{-1}$$

$$y = -3x - 6$$

Equation: $\underline{\quad y = -3x - 6 \quad}$

m = $\underline{\quad -3/1 \quad}$ b = $\underline{\quad -6 \quad}$

$y = -3x - 6$
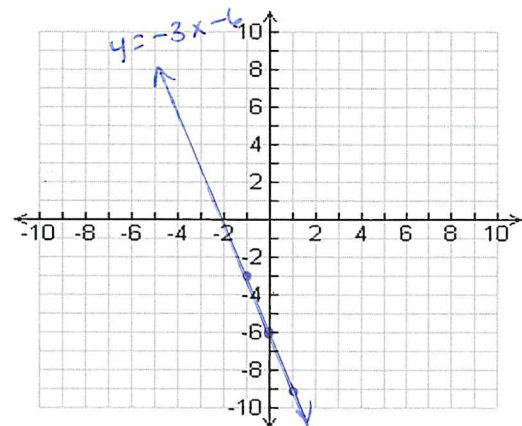
3. $3x \boxed{+ 2y} - 4 = 0$

$$\frac{2y}{2} = \frac{-3x}{2} + \frac{4}{2}$$

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

Equation: $\underline{\quad y = \frac{-3}{2}x + 2 \quad}$

m = $\underline{\quad -3/2 \quad}$ b = $\underline{\quad 2 \quad}$

$y = -3/2x + 2$