

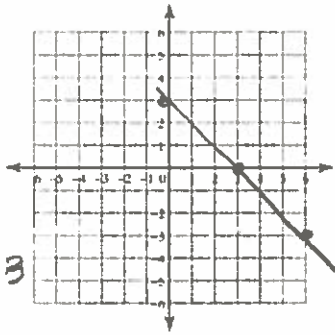
$$Ax + By = C \Rightarrow y = mx + b$$

Ex. 1 $4x + 3y = 9$

$$\begin{array}{r} -4x \\ \hline 3y = -4x + 9 \\ \hline \end{array}$$

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

$b = 3$
 start @ $(0, 3)$
 $m = -\frac{4}{3}$
 down 4, over 3



Steps Solving:

- 1) Add or subtract the x-term to move it to the right side.
- 2) Divide by the y coefficient
- 3) write as $y = mx + b$

Graphing:

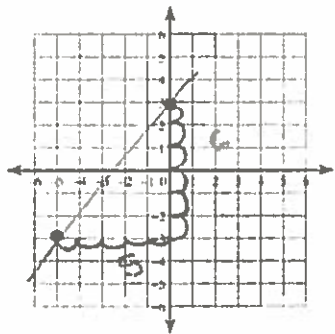
- 1) starting at b on the y-axis
- 2) use rise run

Ex. 2 $6x - 5y = -15$

$$\begin{array}{r} -6x \\ \hline -5y = -6x - 15 \\ \hline \end{array}$$

$$y = \frac{6}{5}x + 3$$

$b = 3$
 start @ $(0, 3)$
 $m = \frac{6}{5} = \frac{-6}{-5}$

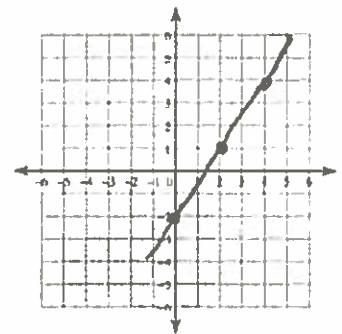


You Try 3 $-3x + 2y = -4$

$$\begin{array}{r} -3x \\ +3x \\ \hline 2y = 3x - 4 \\ \hline \end{array}$$

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

$b = -2$
 start @ $(0, -2)$
 $m = \frac{3}{2}$



When should we convert from standard form to slope-intercept form?

- when we need the slope
- when we need to graph but solving for the x-intercept gives a fraction

Convert Slope-Intercept Form to Standard Form

$$y = mx + b \Rightarrow Ax + By = C$$

<p><u>Ex. 3</u> $7(y) = (-\frac{3}{7}x + 5) \cdot 7$</p> $7y = -\frac{3}{7}x + 35$ $+ \frac{3x}{3x} \quad \frac{35 \cdot 7}{7}$ <hr/> $3x + 7y = 35$	<p><u>Steps Converting:</u></p> <ol style="list-style-type: none"> 1) Clear fraction by multiplying by the denominator. * distribute 2) Add or subtract x-term. to move it to the left side. 3) write as $Ax + By = C$
<p><u>Ex. 4</u> $(3)(7)(y) = (\frac{2}{3}x + \frac{4}{7})(3)(7)$</p> $21y = \frac{2}{3}x \cdot 3 \cdot 7 + \frac{4}{7} \cdot 3 \cdot 7$ $21y = \frac{14}{3}x + 12$ $-14x \quad -14x$ <hr/> $-14x + 21y = 12$	<p><u>You Try 5</u> $(4)(y) = (\frac{3}{4}x - 2) \cdot 4$</p> $4y = \frac{3}{4}x - 8$ $-3x \quad -3x$ <hr/> $-3x + 4y = -8$ $\frac{3}{4}x \cdot 4 = \frac{12}{4}x = 3x$

KEY IDEA:

- Use inverse operations to manipulate the equation.