

Lesson 6 Sketching Linear Functions

Method 1: Slope y-Intercept

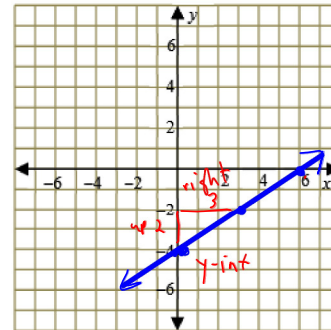
Recall: $y = mx + b$

Example 1

Sketch the graph of $y = \frac{2}{3}x - 4$, using the slope y-intercept method.

$m = \frac{2}{3}$ $y\text{-int} = -4$
 up 2, right 3

- ① Plot y-int -4 Pt (0, -4)
- ② Use slope to get a second point
Start at (0, -4) and go up 2, right 3



Example 2

Sketch the graph of $x - 2y = 2$, using the slope y-intercept method.

↳ write in $y = mx + b$ form

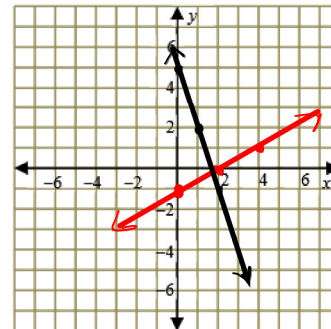
Subtract x from both sides
 Divide each term by -2

$$x - 2y = 2$$

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

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

slope up 1, right 2 $y\text{-int}$



* sketch $y = -3x + 5$

$m = -\frac{3}{1}$ down 3, right 1

L6 Sketching Linear Functions recovered.notebook

Method 2: Intercepts

Recall:

- x-intercept is the value of x when $y = 0$.
- y-intercept is the value of y when $x = 0$.

Example 1

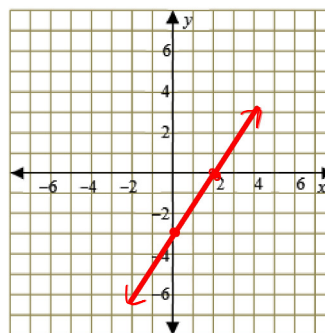
Sketch the graph of $3x - 2y = 6$ using the intercept method of graphing.

Solve for x

$$\begin{aligned} \text{x-int (sub in } y=0) \\ 3x - 2(0) &= 6 \\ 3x &= 6 \\ x &= 2 \\ \text{Pt } (2, 0) \end{aligned}$$

Solve for y

$$\begin{aligned} \text{y-int (sub in } x=0) \\ 3(0) - 2y &= 6 \\ -2y &= 6 \\ y &= -3 \\ \text{Pt } (0, -3) \end{aligned}$$



Example 2

Sketch the graph of $3x + 4y - 12 = 0$ using the intercept method.

y-int

$$\begin{aligned} 3(0) + 4y - 12 &= 0 \\ 4y &= 12 \\ y &= 3 \end{aligned}$$

x-int

$$\begin{aligned} 3x + 4(0) - 12 &= 0 \\ 3x &= 12 \\ x &= 4 \end{aligned}$$

