

Section 4.6 Quick Graphs Using Slope-Intercept Form

Slope-intercept form of the equation of a line: $y = mx + b$

($m = \text{slope}$, $b = \text{y-intercept}$)

$(x, y) = \text{ordered pair}$

EXAMPLES

1. If necessary, write each equation in slope-intercept form (solve for y .) Then state the slope and y-intercept.

a. $y = 8x - 9$

$m = \frac{8}{1}$
 $b = \frac{-9}{1}$

b. $y = -5x$

$m = \frac{-5}{1}$
 $b = \frac{0}{1}$

c. $2x + y = 10$

$-2x$
 $-2x$ $y = -2x + 10$
 $m = \frac{-2}{1}$
 $b = \frac{10}{1}$

2. Graphing Using Slope and y-Intercept

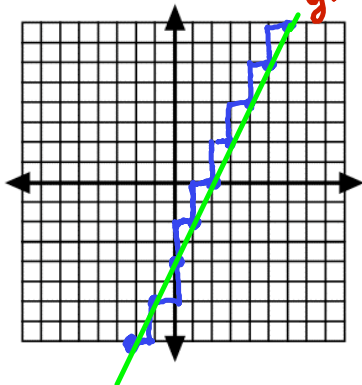
Label

- Write the equation in slope-intercept form.
- Find the slope and y-intercept.
- Plot the y-intercept.
- Draw a slope triangle to locate a second point on the line.
- Draw a line through the points.

$y = mx + b$

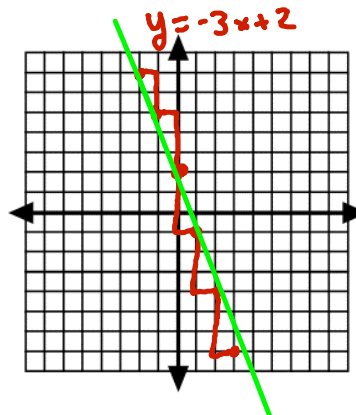
a. $y = 2x - 4$

$m = \frac{2 \text{ rise}}{1 \text{ run}}$
 $b = \frac{-4}{1}$
 $y = 2x - 4$

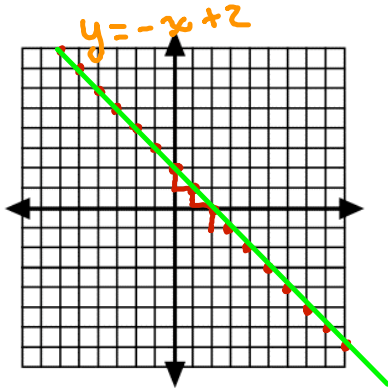


b. $y + 3x = 2$

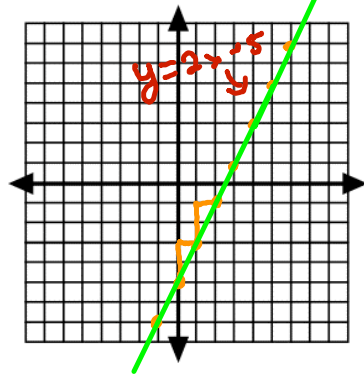
$-3x$ $-3x$ $y = -3x + 2$
 $m = \frac{-3 \text{ rise}}{1 \text{ run}}$
 $b = \frac{2}{1}$



c. $y = -x + 2$ $m = -1/1$
 $b = 2$



d. $-4x + 2y = -10 + 4x$
 $+4x$ $\frac{2y}{2} = \frac{4x - 10}{2}$



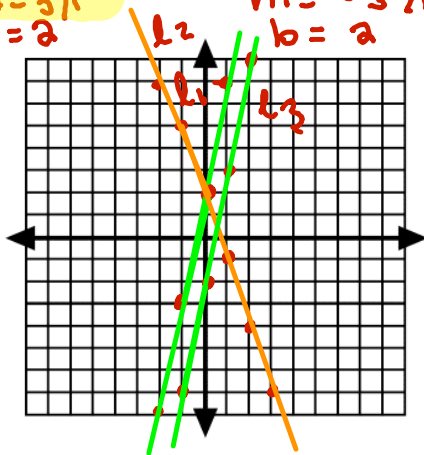
$y = 2x - 5$
 $m = 2$
 $b = -5$

3. Graph the following equations to determine which of the lines are parallel.

a. l_1
 $y = 5x + 2$
 $m = 5/1$
 $b = 2$

b. l_2
 $y = -3x + 2$
 $m = -3/1$
 $b = 2$

c. l_3
 $y = 5x - 2$
 $m = 5$
 $b = -2$



$l_1 \parallel l_3$

Conclusion: Parallel Lines have the same slope