Graph Lines

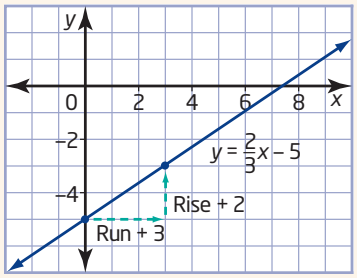
Method 2: Use the Slope and the y-Intercept

Graph the line $y = \frac{2}{3}x - 5$.

The equation is in the form $y = mx + b$.

The slope, m, is $\frac{2}{3}$. So, $\frac{\text{rise}}{\text{run}} = \frac{2}{3}$.

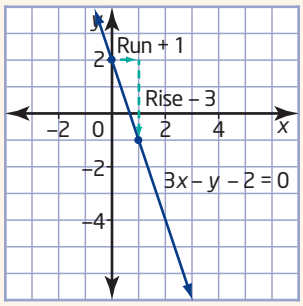
The y-intercept, b, is -5. So, a point on the line is $(0, -5)$.
Start on the y-axis at $(0, -5)$.
Then, use the slope to reach another point on the line.



Graph the line $3x + y - 2 = 0$.
First rearrange the equation to write it in the form $y = mx + b$.

$$3x + y - 2 = 0$$
$$y = -3x + 2$$

The slope is -3, so $\frac{\text{rise}}{\text{run}} = \frac{-3}{1}$. The y-intercept is 2.
Use these facts to graph the line.



Method 3: Use Intercepts

Graph the line $3x - 4y = 12$.
At the x-intercept, $y = 0$.

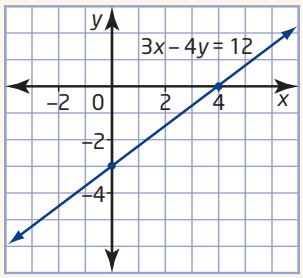
$$3x - 4(0) = 12$$
$$3x = 12$$
$$x = 4$$

The x-intercept is 4. A point on the line is $(4, 0)$.

At the y-intercept, $x = 0$.

$$3(0) - 4y = 12$$
$$-4y = 12$$
$$y = -3$$

The y-intercept is -3. A point on the line is $(0, -3)$.



5. Graph each line. Use a table of values or the slope y-intercept method.

a) $y = x + 2$ **b)** $y = 2x + 3$

c) $y = \frac{1}{2}x - 5$ **d)** $y = -\frac{2}{5}x + 6$

6. Graph each line by first rewriting the equation in the form $y = mx + b$.

a) $x - y + 1 = 0$ **b)** $2x + y - 3 = 0$

c) $-x - y + 7 = 0$ **d)** $5x + 2y + 2 = 0$

7. Graph each line by finding the intercepts.

a) $x + y = 3$ **b)** $5x - 3y = 15$

c) $7x - 3y = 21$ **d)** $4x - 8y = 16$

8. Graph each line. Choose a convenient method.

a) $-x - y - 1 = 0$ **b)** $2x - 5y = 20$

c) $2x + 3y + 6 = 0$ **d)** $y = \frac{3}{4}x - 1$