

GRAPHING LINES USING SLOPE-INTERCEPT FORM

$$y = mx + b$$

↑
slope

↑
y-intercept

Find the slope and y-intercept of each equation.

1. $y = 3x + 5$

2. $y = \frac{1}{2}x - 4$



3. $2x + y = 7$

$-2x$ $-2x$

$$y = 7 - 2x$$

or

$$y = -2x + 7$$

4. $6x + 3y = -9$

$-6x$ $-6x$

$$\frac{3y}{3} = \frac{-9}{3} - \frac{6x}{3}$$

$$y = -3 - 2x$$

$$y = -2x - 3$$

5. $3x + 4y = 8$

$-3x$ $-3x$

$$\frac{4y}{4} = \frac{8}{4} - \frac{3x}{4}$$

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

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

6. $5x - 3y = 6$

$-5x$ $-5x$

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

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

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

Graph the equation using slope-intercept form.

7. $y = -3x + 2$

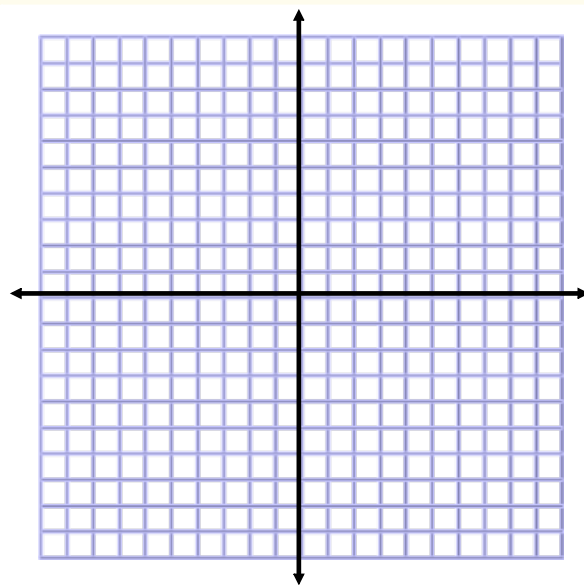
Step 1:

**Find the slope
and y-intercept.**

**Step 2: Plot the
y-intercept.**

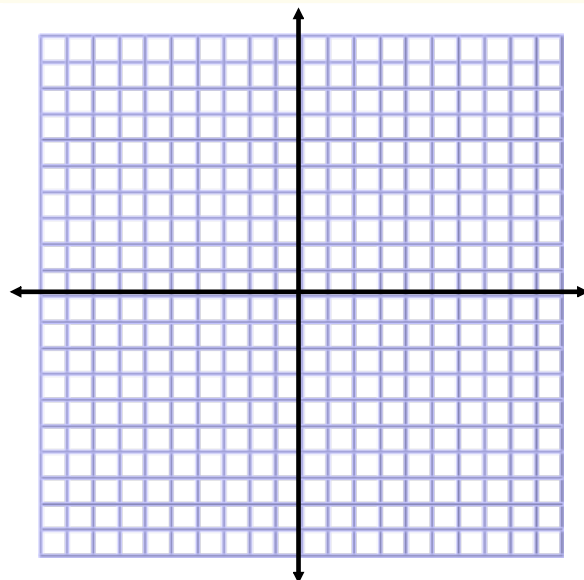
**Step 3: Use the slope
to find a couple more points.**

Step 4: Draw a line through the points.



Graph the equation using slope-intercept form.

8. $y = 4x - 5$



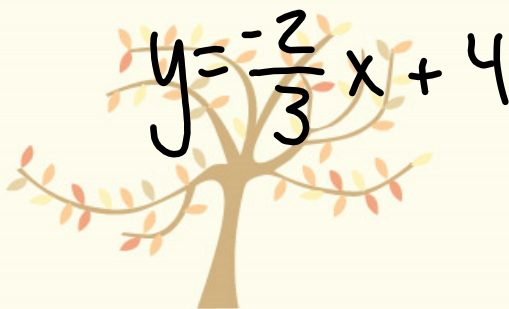
Graph the equation using slope-intercept form.

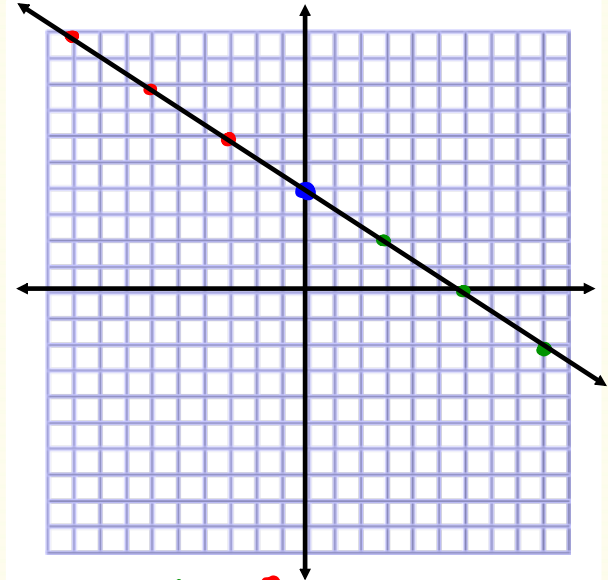
$$9. \quad 2x + 3y = 12$$

$-2x \qquad -2x$

$$\frac{3y}{3} = \frac{12-2x}{3}$$

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

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




$$m = -\frac{2}{3} \quad \begin{matrix} \downarrow \\ \rightarrow \end{matrix} \quad \begin{matrix} \uparrow \\ \leftarrow \end{matrix} \quad b = 4$$

Graph the equation using slope-intercept form.

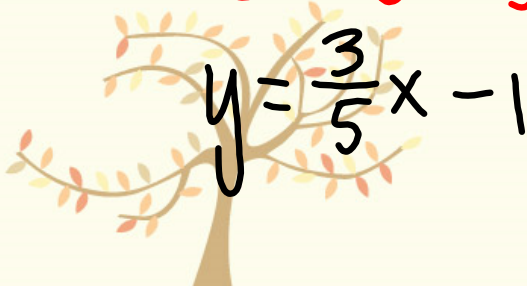
$$10. \quad -3x + 5y + 5 = 0$$

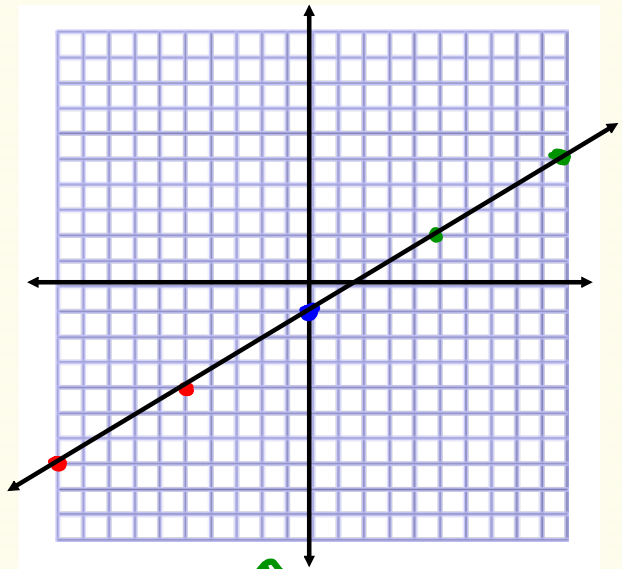
$+3x \qquad +3x$

$$5y + 5 = 3x$$

$-5 \qquad -5$

$$\frac{5y}{5} = \frac{3x-5}{5}$$

$$y = \frac{3}{5}x - 1$$




$$m = \frac{3}{5} \quad \begin{matrix} \uparrow \\ \rightarrow \end{matrix} \quad \begin{matrix} \downarrow \\ \leftarrow \end{matrix} \quad b = -1$$