

5.4 Graph Using Slope Intercept Form

PRACTICE

Identify the slope and y -intercept of the line with the given equation.

1. $y = 2x + 1$

$m = 2$

$b = 1$

2. $y = 6 - 3x$

$m = -3$

$b = 6$

3. $y = \frac{2}{3}x - 1$

$m = \frac{2}{3}$

$b = -1$

4. MULTIPLE CHOICE What is the slope of the line with the equation $y = -18x - 9$? A

A) -18

B) -9

C) 9

D) 18

 E) $\frac{18}{9}$

Rewrite the equation in slope-intercept form. Then identify the slope and the y -intercept of the line.

5. $4x + y = 1$

$\underline{-4x} \quad \underline{-4x}$

$y = 1 - 4x$

$m = -4$
 $b = 1$

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

$\underline{-6x} \quad \underline{-6x}$

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

$y = -3 + 2x$

$m = 2$
 $b = -3$

7. $2x + 5y = -10$

$\underline{-2x} \quad \underline{-2x}$

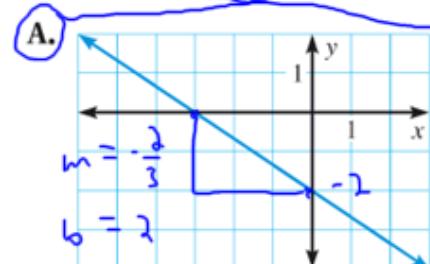
$\frac{5y}{5} = \frac{-10}{5} - \frac{2x}{5}$
 $y = -2 - \frac{2}{5}x$

$m = -\frac{2}{5}$

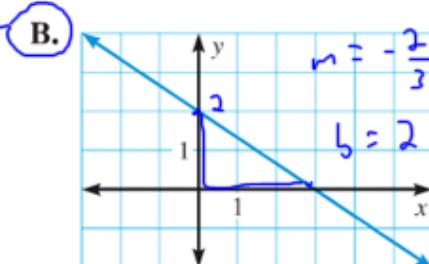
$b = -2$

Match the equation with its graph.

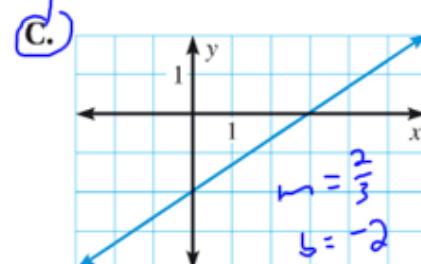
8. $y = -\frac{2}{3}x + 2$
 $m = -\frac{2}{3}$
 $b = 2$



9. $y = -\frac{2}{3}x - 2$
 $m = -\frac{2}{3}$
 $b = -2$

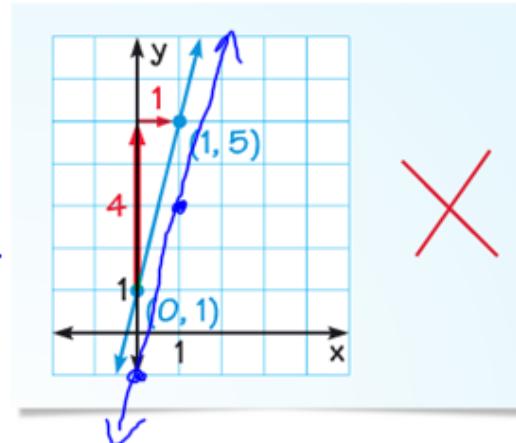


10. $y = \frac{2}{3}x - 2$
 $m = \frac{2}{3}$
 $b = -2$



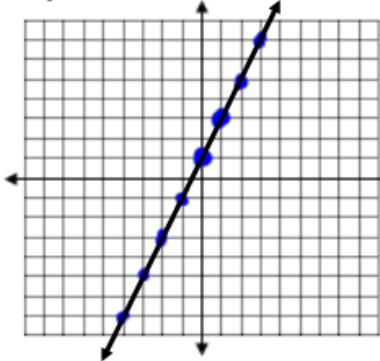
11. **ERROR ANALYSIS** Describe and correct the error in graphing the equation $y = 4x - 1$. $m = 4$
 $b = -1$

They put the y -intercept at positive 1 when really it is negative 1.

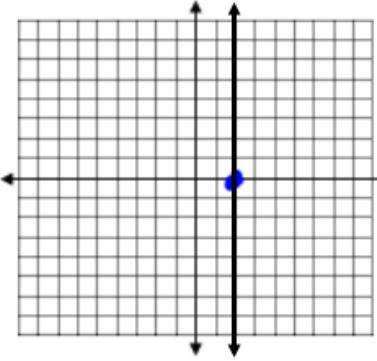


Graph the equations. Plot as many points on the graph that will fit!

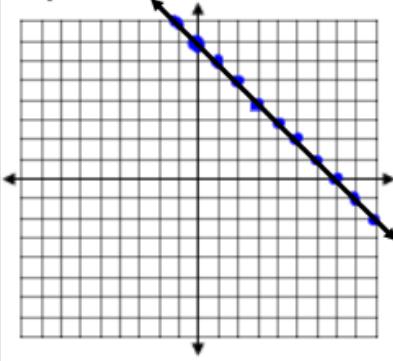
12. $y = 2x + 1$



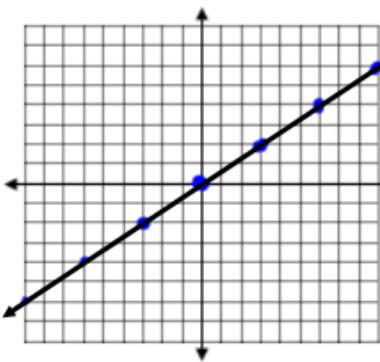
13. $x = 2$



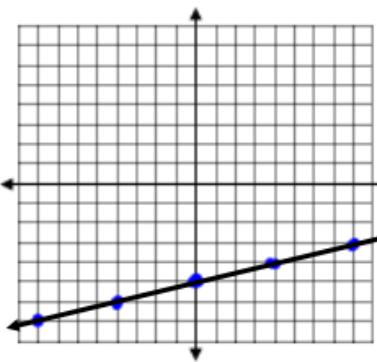
14. $y = -x + 7$



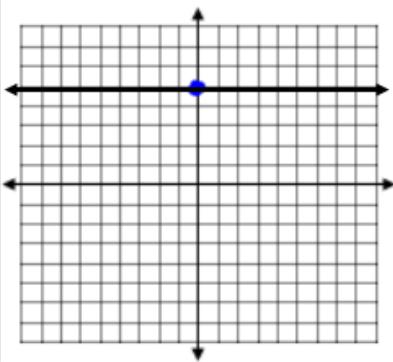
15. $y = \frac{2}{3}x + 0$



16. $y = \frac{1}{4}x - 5$



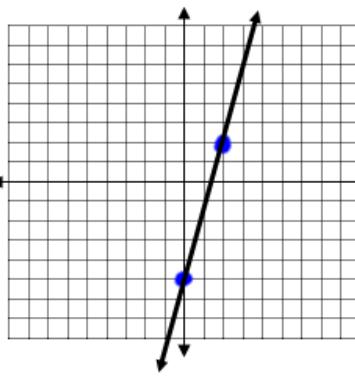
17. $y = 5$



Solve for y and then graph!

18. $7x - 2y = 10$

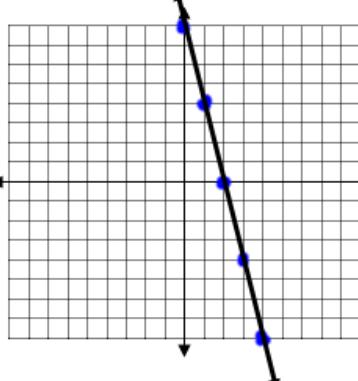
$$\begin{array}{rcl} -7x & & \\ \hline -1y & = & 10 - 7x \\ \hline -2 & & -2 \\ y & = & -5 + \frac{7}{2}x \end{array}$$



Solve for y and then graph!

19. $8x + 2y = 16$

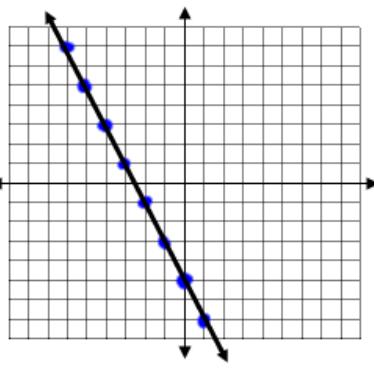
$$\begin{array}{rcl} -8x & & \\ \hline 2y & = & 16 - 8x \\ \hline 2 & & 2 \\ y & = & 8 - 4x \end{array}$$



Solve for y and then graph!

20. $-2x - y = 5$

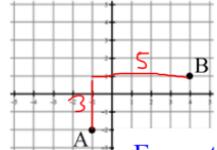
$$\begin{array}{rcl} +2x & & \\ \hline -y & = & 5 + 2x \\ \hline -1 & & -1 \\ y & = & -5 - 2x \end{array}$$



GRAPH

1. Describe how to move from point A to point B.

3 units in the y direction (rise)
5 units in the x direction (run)



2. Describe how to move from point C(0,3) to point D(2,-3).

SIMPLIFY

3. $5(2x+1) - 6$

$$\begin{array}{r} 10x + 5 - 6 \\ \hline 10x - 1 \end{array}$$

4. $x - 5(2x - 4)$

SOLVE

5. $6 + \frac{2}{3}x = 8$

$$\begin{array}{rcl} \left(\frac{3}{2}\right) & \frac{2}{3}x & + 2\left(\frac{3}{2}\right) \\ \hline & x & = 3 \end{array}$$

6. $x + 5 = 8x - 6$

For extra help, check the Skillz Review video!