

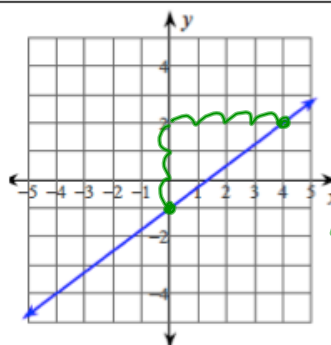
## 2.5 Practice Solutions

Directions: Write the equation of each line.

1) slope =  $\frac{3}{5}$ , y-intercept = 4

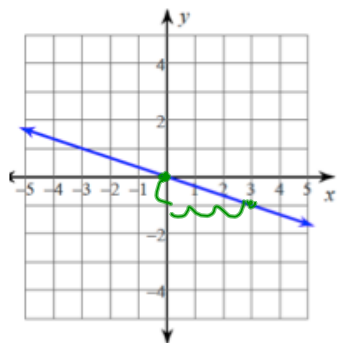
$$y = \frac{3}{5}x + 4$$

2)



$$y = \frac{3}{4}x - 1$$

3)



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

4) through: (2, 1), slope =  $-\frac{3}{2}$

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

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

$$+1 \qquad +1$$

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

5) through: (-3, -2), slope =  $\frac{4}{3}$

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

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

$$\underline{-2 \qquad -2}$$

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

6) through: (-5, 5), slope =  $-\frac{2}{5}$

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

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

$$+5 \qquad +5$$

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

7) through: (-2, 4) and (2, -1)

$$m = \frac{-1 - 4}{2 - (-2)} = \frac{-5}{4}$$

$$y - 4 = -\frac{5}{4}(x + 2)$$

$$-1 - 4 = -\frac{5}{4}x - \frac{5}{2}$$

$$+4 \qquad +4$$

$$y = -\frac{5}{4}x + \frac{3}{2}$$

8) through: (0, -5) and (2, 4)

$$m = \frac{4 - (-5)}{2 - 0} = \frac{9}{2}$$

$$y + 5 = \frac{9}{2}(x - 0)$$

$$y + 5 = \frac{9}{2}x$$

$$-5 \qquad -5$$

$$y = \frac{9}{2}x - 5$$

9) through: (4, -5) and (2, -4)

$$m = \frac{-4 - (-5)}{2 - 4} = \frac{1}{-2}$$

$$y + 5 = -\frac{1}{2}(x - 4)$$

$$y + 5 = -\frac{1}{2}x + 2$$

$$\begin{array}{r} y + 5 \\ -5 \\ \hline y = -\frac{1}{2}x - 3 \end{array}$$

10) through: (-1, 1) and (-3, 5)

$$m = \frac{5 - 1}{-3 - (-1)} = \frac{4}{-2} = -2$$

$$y - 1 = -2(x + 1)$$

$$y - 1 = -2x - 2$$

$$\begin{array}{r} y - 1 \\ +1 \\ \hline y = -2x - 1 \end{array}$$

11) through: (1, -3), perp. To  $x = 0$ .

$x = 0$  is a vertical line.

So we need a horizontal line. ...  $y = ?$

(1, -3)

$$\begin{array}{r} (1, -3) \\ \uparrow \\ y = -3 \end{array}$$

12) through: (1, -2), parallel to  $y = -\frac{2}{3}x - 4$

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

$$y + 2 = -\frac{2}{3}(x - 1)$$

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

$$\begin{array}{r} y + 2 \\ -2 \\ \hline y = -\frac{2}{3}x - \frac{4}{3} \end{array}$$

13) through: (2, 0), parallel to  $y = \frac{4}{5}x - 3$

$$m = \frac{4}{5}$$

$$y - 0 = \frac{4}{5}(x - 2)$$

$$\begin{array}{r} y - 0 \\ y = \frac{4}{5}x - \frac{8}{5} \end{array}$$

14) through: (1, 0), perp. to  $y = 2x + 5$

$$m = -\frac{1}{2}$$

$$y - 0 = -\frac{1}{2}(x - 1)$$

$$\begin{array}{r} y - 0 \\ y = -\frac{1}{2}x + \frac{1}{2} \end{array}$$