

Key

## Review for Quiz (4.6, 4.7, 4.9)

Date \_\_\_\_\_

Period \_\_\_\_\_

Find the slope and y-intercept of each line.

$$1) y = -4x - 3 \quad m = -4 \\ b = -3$$

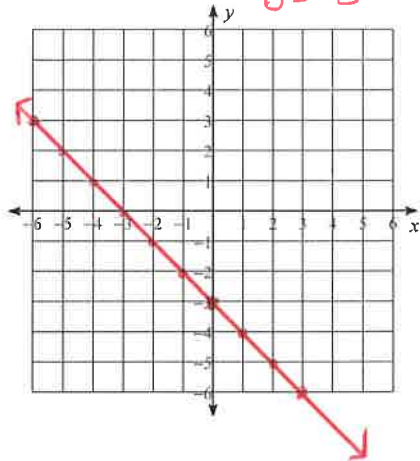
$$2) y = -2x - 5 \quad m = -2 \\ b = -5$$

$$3) y = -3 \quad m = 0 \\ b = -3$$

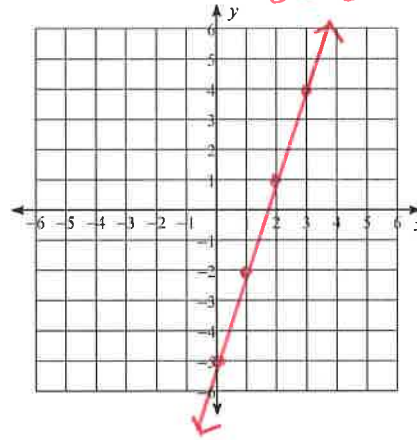
$$4) x - 2y = -10 \quad m = \frac{1}{2} \\ b = 5 \\ \frac{-x}{-2} = \frac{-x-10}{-2} \quad y = \frac{1}{2}x + 5$$

Identify the slope and the y-intercept. Then sketch the graph of each line.

$$5) y = -x - 3 \quad m = -1 \\ b = -3$$



$$6) y = 3x - 5 \quad m = 3 \\ b = -5$$



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

$$7) \text{ Slope} = -\frac{8}{3}, \text{ y-intercept} = 3$$

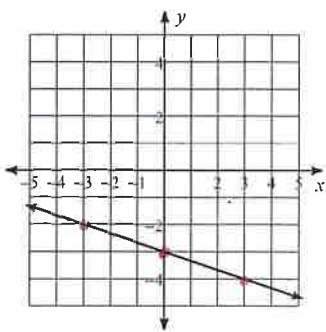
$$y = -\frac{8}{3}x + 3$$

$$8) \text{ Slope} = -\frac{6}{5}, \text{ y-intercept} = 2$$

$$y = -\frac{6}{5}x + 2$$

Write the slope-intercept form of the equation of each line.

9)

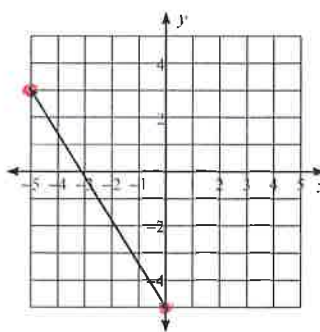


$$m = -\frac{1}{3}$$

$$b = -3$$

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

10)



$$m = -\frac{8}{5}$$

$$b = -5$$

$$y = -\frac{8}{5}x - 5$$

11)  $7x - 2y = -4$

$$\begin{array}{r} -7x \quad -7x \\ \hline -2y = -7x - 4 \\ \frac{-2y}{-2} = \frac{-7x}{-2} - \frac{4}{-2} \\ y = \frac{7}{2}x + 2 \end{array}$$

12)  $x - 3y = 6$

$$\begin{array}{r} -x \quad -x \\ \hline -3y = -x + 6 \\ \frac{-3y}{-3} = \frac{-x}{-3} + \frac{6}{-3} \\ y = \frac{1}{3}x - 2 \end{array}$$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

13) through:  $(-5, 0)$ , slope =  $-\frac{2}{5}$

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

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

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

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

$$\begin{array}{r} y - 4 = -\frac{1}{3}x - 1 \\ +4 \qquad \qquad +4 \\ \hline y = -\frac{1}{3}x + 3 \end{array}$$

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

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

$$\begin{array}{r} y - 3 = \frac{1}{2}x + 1 \\ +3 \qquad \qquad +3 \\ \hline y = \frac{1}{2}x + 4 \end{array}$$

16) through:  $(-5, 1)$ , slope = 0

$$y = 1$$

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17) through:  $(-2, 0)$ , slope = undefined  
 $x \quad y$

$$\boxed{x = -2}$$

18) through:  $(4, -3)$ , slope =  $\frac{1}{2}$   
 $x_1 \quad y_1$

$$y + 3 = \frac{1}{2}(x - 4)$$

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

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

Write the slope-intercept form of the equation of the line through the given points.

19) through:  $(1, -3)$  and  $(0, 5)$   
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{5 - (-3)}{0 - 1} \\ &= \frac{8}{-1} \\ &= \boxed{-8} \end{aligned}$$

$$y - 3 = -8(x - 1)$$

$$\begin{array}{r} y - 3 = -8x + 8 \\ \cancel{-3} \qquad \qquad \qquad \cancel{-3} \end{array}$$

$$\boxed{y = -8x + 5}$$

20) through:  $(-1, 3)$  and  $(0, -4)$   
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{-4 - 3}{0 - (-1)} \\ &= \frac{-7}{1} \\ &= \boxed{-7} \end{aligned}$$

$$y - 3 = -7(x + 1)$$

$$\begin{array}{r} y - 3 = -7x - 7 \\ \cancel{+3} \qquad \qquad \qquad \cancel{+3} \end{array}$$

$$\boxed{y = -7x - 4}$$

21) through:  $(0, 3)$  and  $(3, 4)$   
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{4 - 3}{3 - 0} \\ &= \boxed{\frac{1}{3}} \end{aligned}$$

$$y - 3 = \frac{1}{3}(x - 0)$$

$$\begin{array}{r} y - 3 = \frac{1}{3}x \\ \cancel{+3} \qquad \qquad \qquad \cancel{+3} \end{array}$$

$$\boxed{y = \frac{1}{3}x + 3}$$

22) through:  $(2, 0)$  and  $(-1, 3)$   
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{3 - 0}{-1 - 2} \\ &= \frac{3}{-3} \\ &= \boxed{-1} \end{aligned}$$

$$y - 0 = -1(x - 2)$$

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

$$\boxed{y = -x + 2}$$

Write the slope-intercept form of the equation of the line described.

23) through:  $(0, 4)$ , parallel to  $y = -3x + 2$

$$\begin{aligned} y - 4 &= -3(x - 0) & m &= -3 \\ y - 4 &= -3x & m_{\parallel} &= -3 \\ +4 & \quad +4 & & \\ \hline y &= -3x + 4 \end{aligned}$$

24) through:  $(-5, 4)$ , parallel to  $y = -x - 5$

$$\begin{aligned} y - 4 &= -1(x + 5) & m &= -1 \\ y - 4 &= -x - 5 & m_{\parallel} &= -1 \\ +4 & \quad +4 & & \\ \hline y &= -x - 1 \end{aligned}$$

25) through:  $(3, 0)$ , perp. to  $y = 4x + 1$

$$\begin{aligned} y - 0 &= -\frac{1}{4}(x + 3) & m &= 4 \\ & & m_{\perp} &= -\frac{1}{4} \\ y - 0 &= -\frac{1}{4}x - \frac{3}{4} \\ \hline y &= -\frac{1}{4}x - \frac{3}{4} \end{aligned}$$

26) through:  $(-1, 1)$ , perp. to  $y = -\frac{3}{2}x + 5$

$$\begin{aligned} y - 1 &= \frac{2}{3}(x + 1) & m &= -\frac{3}{2} \\ y - 1 &= \frac{2}{3}x + \frac{2}{3} & m_{\perp} &= \frac{2}{3} \\ +1 & \quad +1 & & \\ \hline y &= \frac{2}{3}x + \frac{5}{3} \end{aligned}$$