

Find the slope of the line through the pair of points.

1.  $(-2, 1)$  and  $(5, -3)$

$$m = \frac{-3 - 1}{5 - (-2)} = \frac{-4}{7}$$

2.  $(7, -4)$  and  $(7, -2)$

$$m = \frac{-2 - (-4)}{7 - 7} = \frac{2}{0}$$

undefined

3.  $(3, -1)$  and  $(-5, -1)$

$$m = \frac{-1 - (-1)}{-5 - 3} = \frac{0}{-8}$$

0

Find the value of x or y so that the line through the pair of points has the given slope.

4.  $(-3, -5)$  and  $(4, y)$  when  $m = 3$

$$\frac{y + 5}{4 - (-3)} \rightarrow \frac{y + 5}{7} = \frac{3}{1}$$

$$y + 5 = 21$$

y = 16

5.  $(-8, -2)$  and  $(x, 2)$  when  $m = \frac{1}{2}$

$$\frac{2 - (-2)}{x - (-8)} \rightarrow \frac{4}{x + 8} = \frac{1}{2}$$

$$x + 8 = 8$$

x = 0

Write the slope-intercept form equation for the line.

6.  $7x - 12y = 96$

$$\frac{-12y = -7x + 96}{-12} \quad \frac{-7x}{-12} \quad \frac{96}{-12}$$

$y = \frac{7}{12}x - 8$

7. Passes through the point  $(-4, 3)$  with a slope of  $\frac{-2}{3}$

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

$$y - 3 = \frac{-2}{3}x - \frac{8}{3}$$

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

8. Passes through  $(-4, 5)$  and  $(4, 3)$

$$m = \frac{3 - 5}{4 - (-4)} = \frac{-2}{8} = -\frac{1}{4}$$

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

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

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

9. Passes through  $(4, -7)$  and  $(6, -7)$

$$m = \frac{-7 - (-7)}{6 - 4} = \frac{0}{2} = 0$$

$y = -7$

Write the standard form equation for the line.

10. Passes through the point  $(-2, 3)$  with a slope of  $\frac{1}{4}$

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

$$\begin{aligned} 4y - 12 &= \frac{x+2}{4} \\ -x + 4y &= 14 \end{aligned}$$

$$\boxed{x - 4y = -14}$$

11. Passes through  $(-4, 1)$  and  $(1, 11)$

$$m = \frac{11-1}{1-(-4)} = \frac{10}{5} = 2$$

$$\begin{aligned} y - 1 &= 2(x + 4) \\ -2x + y - 1 &= 2x + 8 \\ -2x + y &= 9 \end{aligned}$$

$$\boxed{2x - y = -9}$$

Name the x- and y- intercepts.

12.  $y = -8x - 48$

$$x\text{-int.}: 0 = -8x - 48$$

$$48 = -8x \quad (-6, 0)$$

$$y\text{-int.}: y = -8(0) - 48 \quad (0, -48)$$

13.  $2x - y = 35$

$$x\text{-int.}: 2x - 0 = 35$$

$$2x = 35 \quad x = \frac{35}{2}$$

$$y\text{-int.}: 2(0) - y = 35 \quad (0, -35)$$

14. Write the equation of the line in standard form that passes through  $(2, -5)$  and is parallel to the line  $y = -2x + 4$

$$m = -2$$

$$\begin{aligned} y + 5 &= -2(x - 2) \\ y + 5 &= -2x + 4 \\ +2x \quad -5 & \quad +2x \quad -5 \end{aligned}$$

$$\boxed{2x + y = -1}$$

15. Write the equation of the line in slope-intercept form that passes through  $(-6, 2)$  and is perpendicular to the line  $3x - 5y = 15$

$$\frac{-5y}{-5} = \frac{-3x + 15}{-5} \quad y = \frac{3}{5}x - 3$$

$$m_{\perp} = -\frac{5}{3}$$

$$\begin{aligned} y - 2 &= -\frac{5}{3}(x + 6) \\ y - 2 &= -\frac{5}{3}x - 10 \\ +2 & \quad +2 \end{aligned}$$

$$\boxed{y = -\frac{5}{3}x - 8}$$