Name: _____ Date: _____

# Section 7.4 Extra Practice

**1.** For a line with each slope, state the slope of a line parallel to it. What is the slope of a line perpendicular to it?

  **a)** $m = 3$

  **b)** $m = -4$

  **c)** $m = \dfrac{1}{3}$

  **d)** $m = 0.4$

**2.** State the slopes of lines that are parallel to and lines that are perpendicular to each linear equation.

  **a)** $y = 2x - 5$

  **b)** $3x - 4y - 3 = 0$

  **c)** $y = -\dfrac{1}{4}x + 3$

  **d)** $2x + 5y - 1 = 0$

**3.** For each pair of slopes, what is the value of $k$ if the lines are parallel? What is the value of $k$ if the lines are perpendicular?

  **a)** $\dfrac{k}{3}$, 4

  **b)** $k$, 1

  **c)** 2, $\dfrac{5}{k}$

  **d)** $\dfrac{3}{5}$, $\dfrac{k}{15}$

**4.** Identify whether the lines in each pair are parallel, perpendicular, or neither. Explain how you know.

  **a)** $2x + 4y = 5$ and $-2x - 4y = 1$

  **b)** $3x + y - 4 = 0$ and $0 = 3x - y - 2$

  **c)** $y - 7 = 4(x - 3)$ and $y + 3 = 4(x - 1)$

  **d)** $2x + 3y - 6 = 0$ and $3x - 2y - 8 = 0$

**5.** Determine an equation of a line in the form $y = mx + b$ that is parallel to each line and passes through the given point.

  **a)** $y = 4x - 3$, $(2, -3)$

  **b)** $2x + 3y + 9 = 0$, $(-3, 4)$

  **c)** $x = 0$, $(4, 5)$

**6.** Write an equation of a line in the form $y = mx + b$ that is perpendicular to each line and passes through the given point.

  **a)** $y = 3x + 1$, $(1, 4)$

  **b)** $4x + 2y - 3 = 0$, $(0, 5)$

  **c)** $y = 0$, $(-1, 3)$

**7.** Determine an equation in general form, $Ax + By + C = 0$, representing each line.

  **a)** parallel to the $x$-axis and through $(-3, 5)$

  **b)** perpendicular to the $x$-axis and through $(1, 7)$

  **c)** parallel to $3x - 4y + 4 = 0$ with the same $x$-intercept as $y = \dfrac{1}{2}x - 4$

  **d)** perpendicular to $y = -\dfrac{1}{3}x + \dfrac{2}{3}$ with the same $y$-intercept as $2x - y - 10 = 0$

**8.** The four vertices of a quadrilateral are A(–6, 1), B(–1, 3), C(3, –7), and D(–2, –9).

  **a)** Is the quadrilateral a rectangle, a parallelogram, or a trapezoid? Justify your answer.

  **b)** Determine the equations of the four sides of the quadrilateral. Write the equations in the form $y = mx + b$.