Name: _____ Date: _____

BLM 7–10

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

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

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) $\frac{k}{3}$, 4

b) k, 1

c) 2, $\frac{5}{k}$

d) $\frac{3}{5}, \frac{k}{15}$

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

d) perpendicular to $y = -\frac{1}{3}x + \frac{2}{3}$ 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 $y = mx + b$.