Name _____

2-4 Additional Practice

Parallel and Perpendicular Lines

Write an equation for the line that passes through the given point and is parallel to the graph of the given equation.

1. $y = 3x - 2$; (3, 2)

2. $y = \frac{2}{3}x + 19$; (−9, 4)

3. $3x + 4y = 12$; (−4, 7)

Write an equation for the line that passes through the given point and is perpendicular to the graph of the given equation.

4. $y = -2x - 1$; (2, −1)

5. $y + 4 = -\frac{2}{3}(x - 2)$; (4, −2)

6. $x - 6y = -2$; (−5, 6)

Determine whether the graphs of the given equations are *parallel, perpendicular,* or *neither*.

7. $y = 4x + 5$
$2x + 8y = 16$

8. $y = 3x + 5$
$-3x - y = 9$

9. $y - 7x = 3$
$14x - 2y = 28$

10. If you are given the graph of a line and are asked to write the equation of a perpendicular line, does it matter what the *y*-intercept will be for the equation you write? Why or why not?

11. A right triangle is formed by the *y*-axis, the line $y = 2x + 4$, and another line. If the legs of the right triangle intersect at (2, 8), what is the equation of the other line of the triangle?