Name:_____ Date:_____
Algebra 1 Band:_____

Learning Target #8: Determine whether lines are parallel, perpendicular, or neither.

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

1. $y = 4x + 5$
$-4x + y = -13$

2. $y = \frac{7}{9}x - 7$
$y = -\frac{7}{9}x + 3$

3. $y = \frac{7}{8}$
$x = -4$

4. $y = -6x - 8$
$-x + 6y = 12$

5. $3x + 6y = 12$
$y - 4 = -\frac{1}{2}(x + 2)$

6. $y = 4x + 12$
$x + 4y = 32$

Determine whether each statement is *always, sometimes,* or *never* true. Explain.

7. Two lines with different slopes are perpendicular.

8. The slopes of vertical lines and horizontal lines are negative reciprocals.

9. A vertical line is perpendicular to the x-axis.

Learning Target #9: Write equations of parallel lines and perpendicular lines.

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

10. $(3,2); y = 3x - 2$

11. $(-4,-1); y = 2x + 14$

12. $(-8,6); y = -\frac{1}{4}x + 5$

13. $(6,2); y = \frac{2}{3}x + 19$

14. $(10,-5); y = \frac{3}{2}x - 7$

15. $(-3,4); y = 2$

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

16. $(2,-1); y = -2x + 1$

17. $(5,7); y = \frac{1}{3}x + 2$

18. $(3,-6); x + y = -4$

19. $(-9,3); 3x + y = 5$

20. $(-8,3); y + 4 = -\frac{2}{3}(x - 2)$

21. $(0,-5); x - 6y = -2$