

Name: _____

Show work needed to justify your answer.

Date: _____

HW # 28b: Algebra 1 - Standard 16 - Writing Equations in Standard & Point Slope Form

5 points

Write an equation in slope-intercept form for the line that passes through the given point and is **parallel** to the graph of the equation. Then write an equation for the line that passes through the given point and is **perpendicular** to the graph of the equation.

26. $(4, -3); y = 3x - 5$

Parallel $m = 3$
 $y - (-3) = 3(x - 4)$
 $y + 3 = 3x - 12$
 $y = 3x - 15$

29. $(-2, 3); y = -\frac{3}{4}x + 4$

Parallel $m = -\frac{3}{4}$
 $y - 3 = -\frac{3}{4}(x - (-2))$
 $y - 3 = -\frac{3}{4}x - \frac{6}{4}$
 $y - 3 = -\frac{3}{4}x - \frac{3}{2} + \frac{6}{2}$
 $y = -\frac{3}{4}x + \frac{3}{2}$

Perpendicular $m = -\frac{1}{3}$
 $y - (-3) = -\frac{1}{3}(x - 4)$
 $y + 3 = -\frac{1}{3}x + \frac{4}{3} - \frac{9}{3}$
 $y = -\frac{1}{3}x - \frac{5}{3}$

Perpendicular $m = \frac{4}{3}$
 $y - 3 = \frac{4}{3}(x - (-2))$
 $y - 3 = \frac{4}{3}x + \frac{8}{3} + \frac{9}{3}$
 $y = \frac{4}{3}x + \frac{17}{3}$

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

31. $y = 4x + 3$
 $4x + y = 3$
 $-4x - 4x$
 $y = -4x + 3$

neither. Slopes are not equal or opposite reciprocals

32. $y = -2x$
 $2x + y = 3$
 $-2x - 2x$
 $y = -2x + 3$

Same Slope \rightarrow
Lines are Parallel

33. $3x + 5y = 10$
 $5x - 3y = -6$
 $3x + 5y = 10$
 $5y = -3x + 10$
 $y = -\frac{3}{5}x + 2$
 $5x - 3y = -6$
 $-3y = -5x - 6$
 $y = \frac{5}{3}x + 2$
opposite Reciprocal slopes \rightarrow Perpendicular