

Math 1  
Practice 5-2 Equation of a Lines

Name Key Date \_\_\_\_\_

- I can find the equation of a line parallel to another line through a given coordinate.
- I can find the equation of a line perpendicular to another line through a given coordinate.

1. State the slope of the line parallel to  $y = 5x + 2$ .

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2. State the slope of the line perpendicular to  $y = \frac{2}{3}x - 9$ .

$-\frac{3}{2}$

3. State the slope of the line parallel to  $y - 4 = \frac{-3}{4}(x - 10)$ .

$-\frac{3}{4}$

4. State the slope of the line perpendicular to  $y - 6 = \frac{-1}{5}(x - 8)$ .

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5. Write the equation of the line in slope-intercept form through (2, -1) and parallel to  $y = \frac{2}{5}x + 3$ .

$$m = -\frac{2}{5} \quad (2, -1)$$

$$y = mx + b$$

$$-1 = -\frac{2}{5}(2) + b$$

$$-1 = -\frac{4}{5} + b$$

$$-\frac{1}{5} = b$$

$$y = -\frac{2}{5}x + \frac{1}{5}$$

6. Write the equation of the line in slope-intercept form through (1, -5) & perpendicular to  $y = \frac{1}{8}x + 2$ .

$$m = -8 \quad (1, -5)$$

$$y = mx + b$$

$$-5 = -8(1) + b$$

$$-5 = -8 + b$$

$$3 = b$$

$$y = -8x + 3$$

7. Write the equation of the line in point-slope form through (2, -4) & parallel to  $y + 3 = 2(x - 7)$ .

$$m = 2 \quad (2, -4)$$

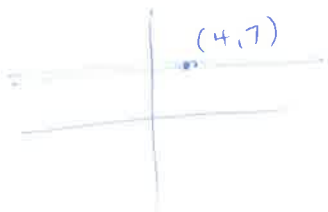
$$y + 4 = 2(x - 2)$$

8. Write the equation of the line in point-slope form through (-1, 5) & perpendicular to  $y = \frac{1}{3}x + 4$ .

$$m = -3 \quad (-1, 5)$$

$$y - 5 = -3(x + 1)$$

9. Write the equation of the line parallel to the x-axis through the point (4, 7).



$$y = 7$$

10. The slope of a line is  $\frac{1}{6}$ , and the line passes through the points (2, 4) and (a, 7). Find a.

$$\frac{1}{6} = \frac{7 - 4}{a - 2}$$

$$a - 2 = 6(3)$$

$$a - 2 = 18$$

$$\boxed{a = 20}$$