

Algebra 1  
Worksheet 3.6  
Parallel and Perpendicular Lines

Name: Ken  
Date: \_\_\_\_\_ Period: \_\_\_\_\_

1. Write the equation of the line that is parallel to the graph of  $y = \frac{1}{2}x + 6$ , and whose y-intercept is -2.

$$(0, -2)$$

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

$$y = mx + b$$

2. Write the equation of the line that is parallel to the graph of  $y = -4x - 9$ , and whose y-intercept is 3.

$$y = -4x + 3$$

3. Write the equation of the line that is parallel to the graph of  $3x - y = 5$ , and whose y-intercept is  $(0, -7)$ .

$$y = 3x - 7$$

4. Write the equation of the line that is parallel to the graph of  $2x + y = 5$ , and whose y-intercept is  $(0, 4)$ .

$$y = -2x + 4$$

Write the slope-intercept form of an equation of the line that passes through the given point and is parallel to the graph of each equation.

5.  $(3, 2)$ ,  $y = x + 5$

$$y - 2 = 1(x - 3)$$

$$y = x - 3 + 2$$

$$y = x - 1$$

6.  $(-2, 5)$ ,  $y = -4x + 2$

$$y - 5 = -4(x + 2)$$

$$-4x - 8 + 5$$

$$y = -4x - 3$$

7.  $(-3, 4)$ ,  $3y = 2x - 3$   $m = \frac{2}{3}$

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

$$y = \frac{2}{3}x + 2 + 4$$

$$y = \frac{2}{3}x + 6$$

8.  $(-1, -4)$ ,  $9x + 3y = 8$   $m = -\frac{9}{3} = -3$

$$y + 4 = -3(x + 1)$$

$$y = -3x - 3 - 4$$

$$y = -3x - 7$$

9. Write the equation of the line that is perpendicular to the graph of  $y = \frac{1}{2}x + 6$ , and whose y-intercept is  $(0, -2)$ .

$$m = -2$$

$$y = -2x - 2$$

$$y = mx + b$$

10. Write the equation of the line that is perpendicular to the graph of  $y = -4x - 9$ , and whose y-intercept is  $(0, 3)$ .

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

$$m = \frac{1}{4}$$

11. Write the equation of the line that is perpendicular to the graph of  $3x - y = 5$ , and whose y-intercept is -7.

$$y = -\frac{1}{3}x - 7$$

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