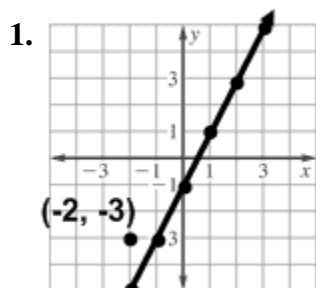


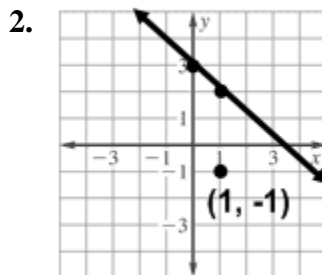
## Writing Equations of Parallel and Perpendicular Lines

### 5.5 Practice 2

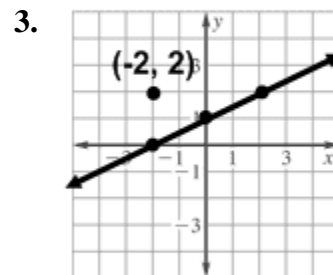
Write the slope-intercept form of an equation of the line that passes through the given point and is parallel to the graph of each equation.



$$y = 2x + 1$$



$$y = -x$$



$$y = \frac{1}{2}x + 3$$

4.  $(3, 2), y = 3x + 4$

$$y = 3x - 7$$

5.  $(-1, -2), y = -3x + 5$

$$y = -3x - 5$$

6.  $(-1, 1), y = x - 4$

$$y = x + 2$$

7.  $(1, -3), y = -4x - 1$

$$y = -4x + 1$$

8.  $(-4, 2), y = x + 3$

$$y = x + 6$$

9.  $(-4, 3), y = \frac{1}{2}x - 6$

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

10.  $(4, 1), y = -\frac{1}{4}x + 7$

$$y = -\frac{1}{4}x + 2$$

11.  $(-5, -1), 2y = 2x - 4$

$$y = x + 4$$

12.  $(3, -1), 3y = x + 9$

$$y = \frac{1}{3}x - 2$$

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

13.  $(-3, -2), y = x + 2$

$$y = -x - 5$$

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

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

15.  $(-1, -6), x + 3y = 6$

$$y = 3x - 3$$

16.  $(-4, 5), y = -4x - 1$

$$y = \frac{1}{4}x + 6$$

17.  $(-2, 3), y = \frac{1}{4}x - 4$

$$y = -4x - 5$$

18.  $(0, 0), y = \frac{1}{2}x - 1$

$$y = -2x$$

19.  $(3, -3), y = \frac{3}{4}x + 5$

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

20.  $(-5, 1), y = -\frac{5}{3}x - 7$

$$y = \frac{3}{5}x + 4$$

21.  $(0, -2), y = -7x + 3$

$$y = \frac{1}{7}x - 2$$

22.  $(2, 3), 2x + 10y = 3$

$$y = 5x - 7$$

23.  $(-2, 2), 6x + 3y = -9$

$$y = \frac{1}{2}x + 3$$

24.  $(-4, -3), 8x - 2y = 16$

$$y = -\frac{1}{4}x - 4$$

## Worksheet 314

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

1.  $(3, 2), y = x + 5$

$$y = x - 1$$

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

$$y = -4x - 3$$

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

$$y = -\frac{3}{4}x - 3$$

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

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

5.  $(12, 3), y = \frac{4}{3}x + 5$

$$y = \frac{4}{3}x - 13$$

6.  $(3, 1), 2x + y = 5$

$$y = -2x + 5$$

7.  $(-3, 4), 3y = 2x - 3$

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

8.  $(-1, -2), 3x - y = 5$

$$y = 3x + 1$$

9.  $(-8, 2), 5x - 4y = 1$

$$y = \frac{5}{4}x + 12$$

10.  $(-1, -4), 9x + 3y = 8$

$$y = -3x - 7$$

11.  $(-5, 6), 4x + 3y = 7$

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

12.  $(3, 1), 2x + 5y = 7$

$$y = -\frac{2}{5}x + \frac{11}{5}$$

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

13.  $(-2, -2), y = -\frac{1}{3}x + 9$

$$y = 3x + 4$$

14.  $(-6, 5), x - y = 5$

$$y = -x - 1$$

15.  $(-4, -3), 4x + y = 7$

$$y = \frac{1}{4}x - 2$$

16.  $(0, 1), x + 5y = 15$

$$y = 5x + 1$$

17.  $(2, 4), x - 6y = 2$

$$y = -6x + 16$$

18.  $(-1, -7), 3x + 12y = 6$

$$y = 4x - 3$$

19.  $(-4, 1), 4x + 7y = 6$

$$y = \frac{7}{4}x + 8$$

20.  $(10, 5), 5x + 4y = 8$

$$y = \frac{4}{5}x - 3$$

21.  $(4, -5), 2x - 5y = -10$

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

22.  $(1, 1), 3x + 2y = -7$

$$y = \frac{2}{3}x + \frac{1}{3}$$

23.  $(-6, -5), 4x + 3y = -6$

$$y = \frac{3}{4}x - \frac{1}{2}$$

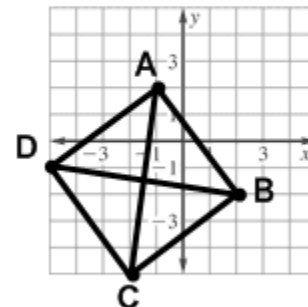
24.  $(-3, 5), 5x - 6y = 9$

$$y = -\frac{6}{5}x + \frac{7}{5}$$

25. **GEOMETRY** Quadrilateral  $ABCD$  has diagonals  $\overline{AC}$  and  $\overline{BD}$ . Determine whether  $\overline{AC}$  is perpendicular to  $\overline{BD}$ . Explain.

$$m_{AB} = 7 \quad m_{BD} = -\frac{1}{7}$$

Yes, their slopes are opposite reciprocals



26. **GEOMETRY** Triangle  $ABC$  has vertices  $A(0, 4)$ ,  $B(1, 2)$ , and  $C(4, 6)$ . Determine whether triangle  $ABC$  has a right triangle. Explain.

Yes because the slopes of the line segments  $AB$  and  $AC$  are opposite reciprocals