## Finding the Equation of a Line

The equation of a line can be determined using the following

- 1. Slope-Intercept Form: y = mx + b
- 2. Point-Slope Form:  $y y_1 = m(x x_1)$
- 3. Two-Point Form:  $y y_1 = \frac{y_2 y_1}{x_2 x_1} (x x_1)$
- 4. Intercept Form:  $\frac{x}{a} + \frac{y}{b} = 1$

### **Practice Exercises**

- A. Write the equation of the line in standard form given the slope and the y-intercept.

  - 1. m = 3, b = 22.  $m = \frac{3}{2}$ , b = -54. m = -1,  $b = \frac{1}{2}$
- m = -6, b = -3 5.  $m = \frac{7}{2}, b = \frac{3}{2}$
- B. Find the equation of the line of the form y = mx + b given the slope and a point.
  - 1. m = 2; (0, 4)
- 4.  $m = \frac{2}{3}$ ; (0, 8)
- 2. m = -5; (-3, 9)
- m = -1; (7, 2) 3.
- 5.  $m = -\frac{7}{4}$ ; (-2, 8)

## Problem Set

- A. Write the equation of the line in standard form given the slope and the y-intercept.
  - 1. m = -2, b = 3
    - 4. m = -3,  $b = \frac{3}{3}$
  - $m=\frac{2}{3}, b=-3$
  - m = -5, b = -1
- 5.  $m = \frac{6}{5}$ ,  $b = \frac{4}{3}$
- B. Find the equation of the line of the form y = mx + b given the slope and a point.
  - 1. m = -2; (3, 0)
- 4.  $m=\frac{3}{2}$ ; (1, 7)
- 2. m = 4; (-2, 7)
- 3. m = 3; (6, 4)
- 5.  $m = -\frac{3}{4}$ ; (-1, 6)

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- A. Write the equation of the line in standard form given the slope and the y-intercept.
  - 1. m = 3, b = 2
- m = 3, b = 2  $m = \frac{3}{2}, b = -5$
- 5.  $m = \frac{7}{2}$ ,  $b = \frac{3}{2}$
- B. Find the equation of the line of the form y = mx + b given the slope and a point.
  - 1. m = 2; (0, 4)
- 4.  $m = \frac{2}{3}$ ; (0, 8)
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## Problem Set

- A. Write the equation of the line in standard form given the slope and the y-intercept.
  - 1. m = -2, b = 32.  $m = \frac{2}{3}$ , b = -3
- 4. m = -3,  $b = \frac{3}{3}$
- m = -5, b = -1
- 5.  $m = \frac{6}{5}$ ,  $b = \frac{4}{3}$
- B. Find the equation of the line of the form y = mx + b given the slope and a point.
  - 1. m = -2; (3, 0)
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Problem Set

- 4.  $m = \frac{2}{3}$ ; (0, 8)
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## 3. m = -1; (7, 2)

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