

Lesson 1.6.2: Finding the Equation of a Line Given the Slope and a Point or Two Points

The equation of a line can be determined using the following formulae:

1. Point-Slope Form:  $y - y_1 = m(x - x_1)$
2. Two-Point Form:  $y - y_1 = \frac{y_2 - y_1}{x_2 - x_1}(x - x_1)$

Practice Exercises 1.6.2

- A. Find the equation of the line of the form  $y = mx + b$  given the slope and a point.

1.  $m = 2$ ; (0, 4)

2.  $m = -5$ ; (-3, 9)

3.  $m = -1$ ; (7, 2)

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

5.  $m = -\frac{7}{4}$ ; (-2, 8)
- B. Find the equation of the line of the form  $y = mx + b$  that passes through the following pairs of points.

1. (3, 4) and (4, 7)

2. (3, -1) and (7, -5)

3. (-1, 10) and (0, 15)

4.  $\left(\frac{7}{2}, 1\right)$  and  $\left(-\frac{1}{2}, 2\right)$

5.  $\left(-\frac{1}{2}, \frac{1}{3}\right)$  and (2, 3)

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2.  $m = 4$ ; (-2, 7)

3.  $m = 3$ ; (6, 4)

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5.  $m = -\frac{3}{4}$ ; (-1, 6)
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