Lesson 2.5.1: Graphing Linear Functions

How to Graph Linear Functions?

1. Using two points
2. Using the x- and y-intercepts
3. Using the slope and a point
4. Using the slope and the y-intercept

Using Two Points:

1. Assign any two values for x.
2. Find the values for y to determine the ordered pairs of two points.
3. Plot the two points and connect them.

Using the x- and y-intercepts:

1. Let $f(x) = 0$ to find the x-intercept.
2. Let $x = 0$ to find the y-intercept.
3. Plot the two points and connect them.

Using the Slope and a Point:

1. Plot the given point.
2. Use the slope to get the other point.
3. Connect the two points.

Using the Slope and the y-intercept:

1. Determine the slope and the y-intercept, then plot the y-intercept.
2. Use the slope to get the other point.
3. Connect the two points.

Practice Exercises 2.5.1

Graph the following functions using the four methods.

1. $f(x) = 3x + 1$
2. $f(x) = \frac{3}{2}x + 3$
3. $f(x) = \frac{4}{3}x + 2$
4. $f(x) = -2x - 1$

Activity 2.5.1

1. Graph the function $f(x) = 2x + 1$ using two points. Let $x_1 = 0$ and $x_2 = 1$.
2. Graph the function $f(x) = -\frac{1}{2}x + 3$ using two points. Let $x_1 = 2$ and $x_2 = -2$.
3. Graph the function $f(x) = \frac{4}{3}x - 4$ using the x- and y-intercepts.

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