Exercise 7

In Exercises 7–16, sketch the graph of the equation by point plotting.

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

Solution

Evaluate y for several integer values of x.

$$x = -3: \quad y = \frac{1}{2}(-3) + 2 = \frac{1}{2}$$

$$x = -2: \quad y = \frac{1}{2}(-2) + 2 = 1$$

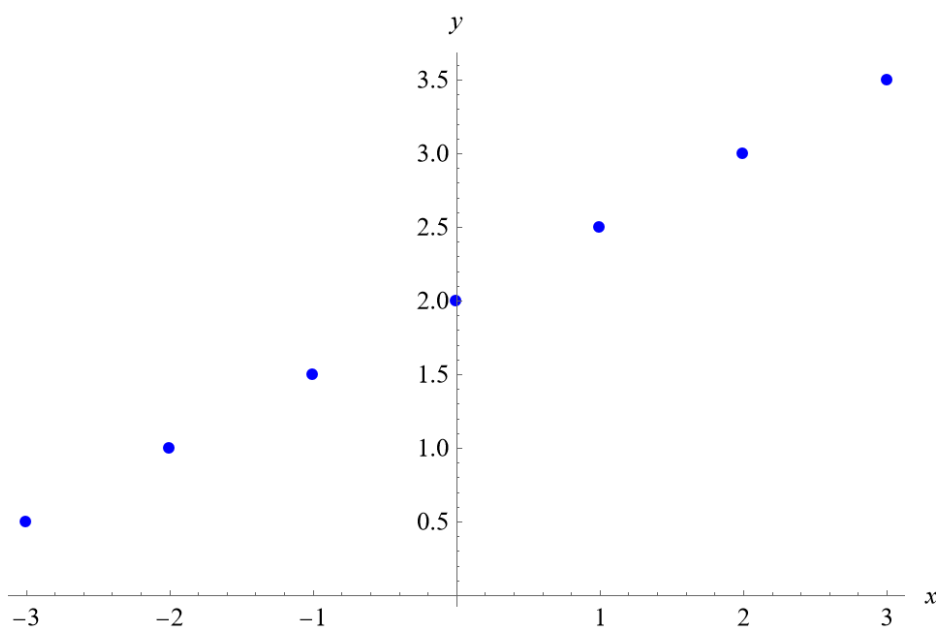$$x = -1: \quad y = \frac{1}{2}(-1) + 2 = \frac{3}{2}$$

$$x = 0: \quad y = \frac{1}{2}(0) + 2 = 2$$

$$x = 1: \quad y = \frac{1}{2}(1) + 2 = \frac{5}{2}$$

$$x = 2: \quad y = \frac{1}{2}(2) + 2 = 3$$

$$x = 3: \quad y = \frac{1}{2}(3) + 2 = \frac{7}{2}$$

The points to plot are $\left(-3, \frac{1}{2}\right)$, $(-2, 1)$, $\left(-1, \frac{3}{2}\right)$, $(0, 2)$, $\left(1, \frac{5}{2}\right)$, $(2, 3)$, and $\left(3, \frac{7}{2}\right)$.

Connect the dots to get the graph of $y = \frac{1}{2}x + 2$.

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