Exercise 69

For the following exercises, write the equation of the line satisfying the given conditions in slope-intercept form.

$$\text{Slope} = \frac{1}{3}, \quad \text{passes through } (0, 4)$$

Solution

The line that passes through (x_0, y_0) with the slope m has the following equation.

$$y - y_0 = m(x - x_0)$$

This is the point-slope formula. Here the slope is $m = 1/3$, and the point is $(0, 4)$.

$$y - 4 = \frac{1}{3}(x - 0)$$

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

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