Exercise 74

A town's population has been growing linearly. In 2003, the population was 45,000, and the population has been growing by 1,700 people each year. Write an equation, $P(t)$, for the population t years after 2003.

Solution

The general formula for a line is given by

$$P(t) = mt + b$$

b represents the initial population,

$$b = 45\,000,$$

and m represents the slope, or the rate that the town's population grows per year.

$$m = 1700$$

Now that m and b are solved for, the equation of the line is known.

$$P(t) = 1700t + 45\,000$$