

## Exercise 13

For the following exercises, consider this scenario: A town has an initial population of 75,000. It grows at a constant rate of 2,500 per year for 5 years.

Find the linear function that models the town's population  $P$  as a function of the year,  $t$ , where  $t$  is the number of years since the model began.

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### Solution

Because the town's population grows at a constant rate, a linear function can be used to model it. The slope is 2500, the rate that the town's population increases per year, and the initial population is 75 000.

$$P(t) = 2500t + 75\,000$$