

**Exercise 39**

Let  $P$  represent the percentage of a city's electrical power that is produced by solar panels  $t$  years after January 1, 2000.

- (a) What does  $dP/dt$  represent in this context?
- (b) Interpret the statement

$$\left. \frac{dP}{dt} \right|_{t=2} = 3.5$$

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**Solution**

$dP/dt$  represents the rate at which the percentage increases with respect to time (with units of %/year). The statement,

$$\left. \frac{dP}{dt} \right|_{t=2} = 3.5,$$

indicates that the city's electrical power produced by solar panels is increasing by 3.5% per year on January 1, 2002.