



# Interpreting Function Parts in Situations

Let's pick apart functions.

## 19.1 Math Talk: Function Evaluation

Find the value of  $x$  for the given function value using the function:  $f(x) = 3(x - 2)$ , mentally.

- $f(x) = 9$
- $f(x) = 210$
- $f(x) = 10$
- $f(x) = 0$

## 19.2 A Long Car Trip

On a long car trip, the distance on the odometer (in miles) is a function of time (in hours after the trip begins) given by the equation  $d(t) = 34t + 45,233$ .

1. What is the rate of change for the function? What does it mean in this situation?
2. What is the value of  $d(0)$ ? What does it mean in this situation?
3. What is the value of  $d(-1)$ ? What does it mean in this situation?
4. When is  $d(t) = 45,800$ ?
5. Do each of the values make sense with this model? Explain your reasoning.

## 19.3 A Warehouse and Highway



1. A warehouse in a factory initially holds 2,385 items and receives all of the items made in production continuously throughout a day. During a particular day, the factory produces 150 items per hour to put into the warehouse. Write a function,  $f$ , to represent the number of items in the warehouse at time  $t$  after production begins for the day.

- a. What are the units for  $t$ ?
- b. What is the domain of the function? Explain your reasoning.
- c. What is the range of the function? Explain your reasoning.
- d. What is the value of  $t$  when  $f(t) = 3,000$ ? What does that mean in this situation?
2. During a focused effort on building new infrastructure for 3 years, a company can build 0.8 miles of highway per day. The company has already built 12 miles of highway before the focused effort. Write a function,  $g$ , to represent the length of highway built by the company as a function of  $t$  during the focused effort.
- a. What are the units for  $g(t)$ ?
- b. What is the domain of the function? Explain your reasoning.
- c. What is the range of the function? Explain your reasoning.
- d. What is the value of  $t$  when  $g(t) = 400$ ? What does that mean in this situation?

