



Interpreting Function Parts in Situations

Let's pick apart functions.

17.1 Math Talk: Function Evaluation

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

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



17.2 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.

17.3 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?

