Unit 4 Lesson 17: Interpreting Function Parts in Situations

1 Math Talk: Function Evaluation (Warm up)

Student Task Statement

Mentally find the value of x for the given function value using the function: f(x) = 3(x-2)

$$f(x) = 9$$

$$f(x) = 210$$

$$f(x) = 10$$

$$f(x) = 0$$

2 A Long Car Trip

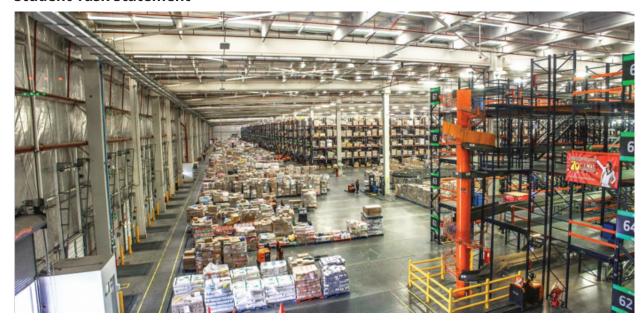
Student Task Statement

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? Explain your reasoning.

3 A Warehouse and Highway

Student Task Statement



- 1. A warehouse in a factory initially holds 2,385 items and receives all of the items made in production 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?