



# Functions with Multiple Parts

Let's look at domains that have boundaries.

## 12.1 Notice and Wonder: Ticket Price

What do you notice? What do you wonder?

| age       | ticket cost |
|-----------|-------------|
| 0-2       | FREE        |
| 2-5       | \$2.00      |
| 5-12      | \$5.00      |
| 13-16     | \$7.50      |
| 17-50     | \$10.00     |
| 55 and up | \$5.00      |

## 12.2 Group Ticket Cost

A community orchestra charges different amounts for tickets to shows based on the age of the person attending. A sign in front of the box office where tickets are sold shows the prices.

| age       | ticket cost |
|-----------|-------------|
| 0–2       | FREE        |
| 3–13      | \$4.00      |
| 14–18     | \$6.00      |
| 19–25     | \$9.00      |
| 26–54     | \$10.00     |
| 55 and up | \$6.00      |

1. How much does each group need to pay for their tickets?
  - a. 2 adults aged 40 and 36, and 2 kids aged 4 and 1
  - b. 3 adults aged 74, 37, and 36
  - c. 5 adults in their 30s and 25 students aged 15 and 16
  - d. 1 adult aged 25 and 4 kids aged 1, 9, 13, and 16

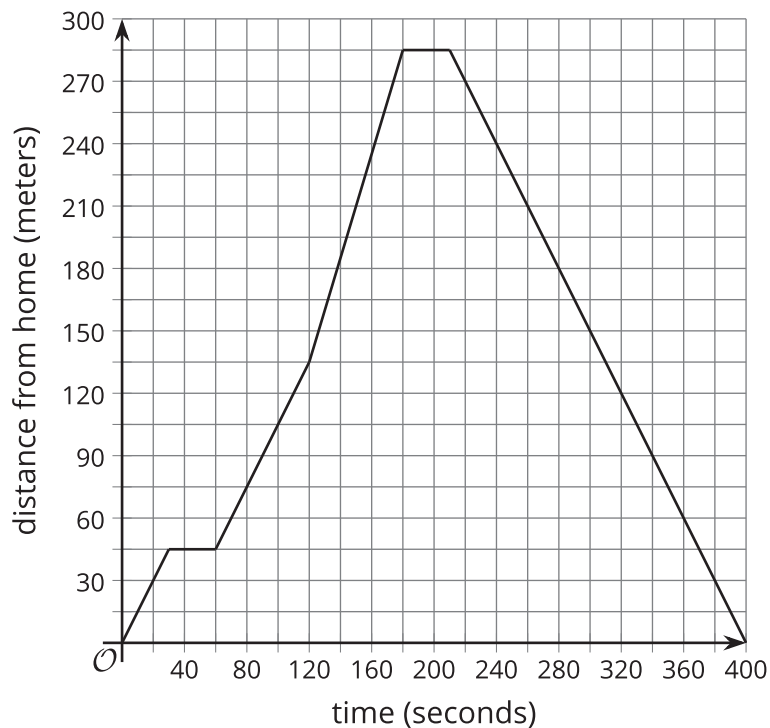
2. A mother arrives and tells the box office clerk that her child is 35 months old. How much should the clerk charge for the child?
  
3. If there is a rule that uses the age of a person attending the orchestra concert as the input and outputs the ticket price for that person, is that rule a function? Explain your reasoning.
  - a. What is the domain for the rule?
  
  
  
  
  
  
  
  
  
  
  - b. What is the range for the rule?



## 12.3

## A Light Trip

1. Noah leaves his home, sometimes running, sometimes walking, sometimes stopping until he remembers that he doesn't have his wallet, then he goes back home. Here is a graph representing his journey.



- a. Describe what is happening on the domain  $210 < x < 400$ .
- b. What are the domain intervals that represent the times when Noah was running?
- c. What are the domain intervals that represent the times when Noah was stopped?
- d. What are the domain intervals that represent the times when Noah was walking away from home?

2. The amount of light in a room is shown as a function of the number of hours after midnight. Describe what might be happening in the room. Be sure to use intervals within the domain in your description.

