



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?

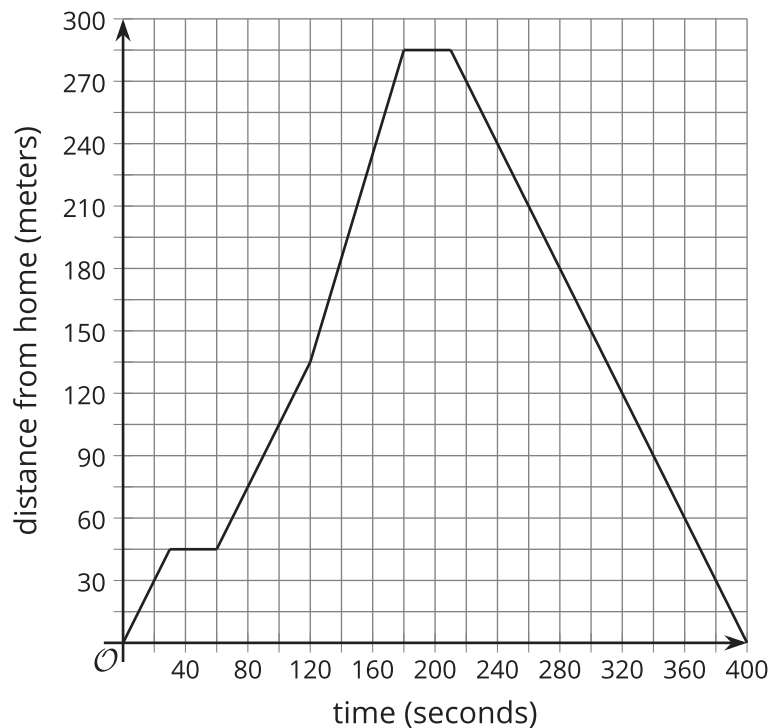
 - b. What is the range for the rule?



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.

