### Lesson 16 Practice Problems

1. Tickets to a family concert cost $10 for adults and $3 for children. The concert organizers collected a total of $900 from ticket sales.
   1. In this situation, what is the meaning of each variable in the equation ?
   2. If 42 adults were at the concert, how many children attended?
   3. If 140 children were at the concert , how many adults attended?
   4. Write an equation to represent  as a function of . Explain what this function tells us about the situation.
   5. Write an equation to represent as a function of . Explain what this function tell us about the situation.
2. A school group has $600 to spend on T-shirts. The group is buying from a store that gives them a $5 discount off the regular price per shirt.

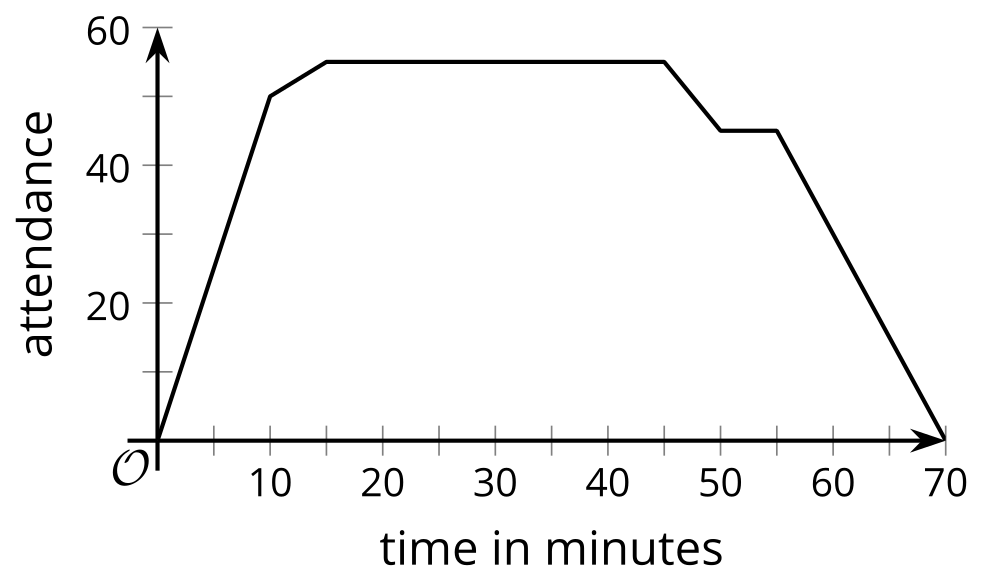
* gives the number of shirts, , that can be purchased at a regular price, .
* gives the regular price, , of a shirt when shirts are bought.
  1. What is when is 20?
  2. What is when is 40?
  3. Is one function an inverse of the other? Explain how you know.

1. Functions and are inverses, and . Is the point on the graph of , on the graph of , or neither?
2. Here are two equations that relate two quantities, and :

* Select **all** statements that are true about  and .
  1. could represent a function, but  could not.
  2. Each equation could represent a function.
  3. could represent a function, but  could not.
  4. The two equations represent two functions that are inverses of one another.
  5. If  represents a function, then the inverse function can be defined by .

1. Elena plays the piano for 30 minutes each practice day. The total number of minutes that Elena practiced last week is a function of , the number of practice days.

* Find the domain and range for this function.
* (From Unit 4, Lesson 10.)

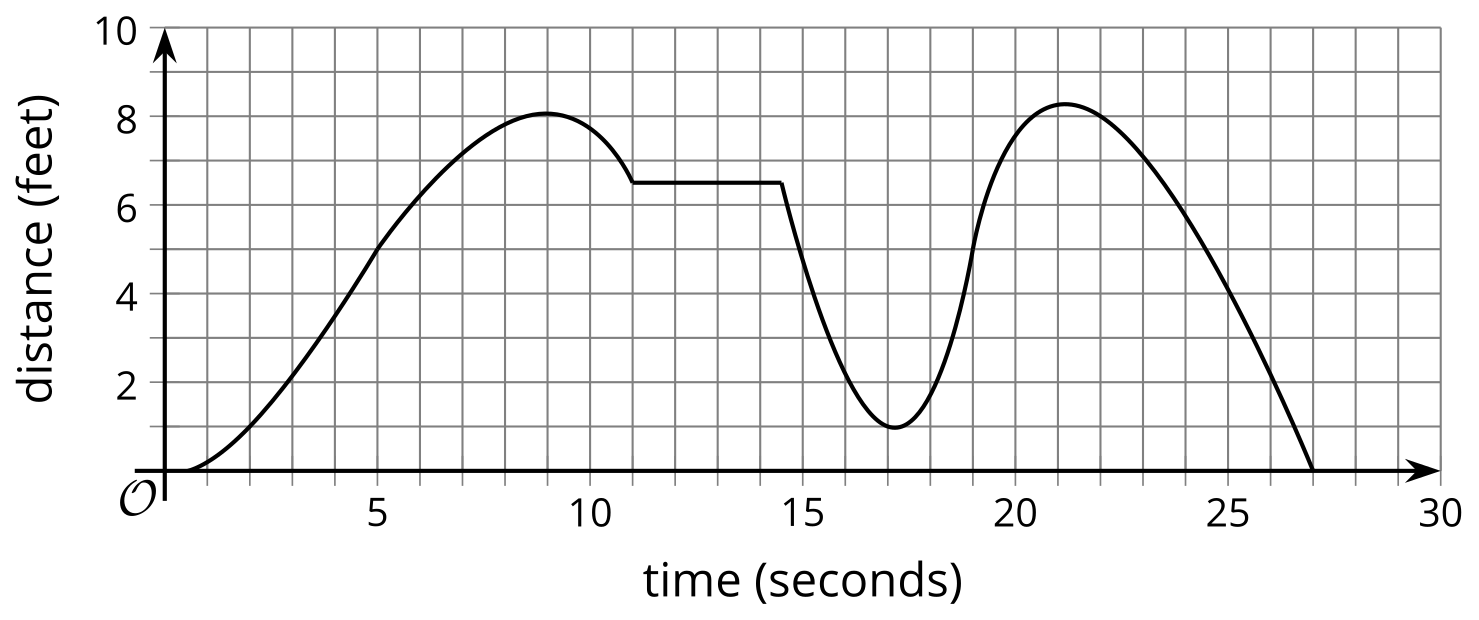
1. The graph shows the attendance at a sports game as a function of time in minutes.
   1. Describe how attendance changed over time.
   * 
   1. Describe the domain.
   2. Describe the range.

* (From Unit 4, Lesson 11.)

1. Two children set up a lemonade stand in their front yard. They charge $1 for every cup. They sell a total of 15 cups of lemonade. The amount of money the children earned, dollars, is a function of the number of cups of lemonade they sold, .
   1. Is 20 part of the domain of this function? Explain your reasoning.
   2. What does the range of this function represent?
   3. Describe the set of values in the range of .
   4. Is the graph of this function discrete or continuous? Explain your reasoning.

* (From Unit 4, Lesson 11.)

1. Here is the graph of function , which represents Andre's distance from his bicycle as he walked in a park.

* 
  1. Estimate .
  2. Estimate .
  3. For what values of does ?
  4. For what values of does ?
  5. For what values of does ?
* (From Unit 4, Lesson 6.)



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