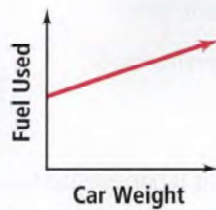




Lesson Check

Do you know HOW?

1. What are the variables in the graph at the right? Use the graph to describe how the variables are related.
2. Describe the relationship between time and temperature in the table below.

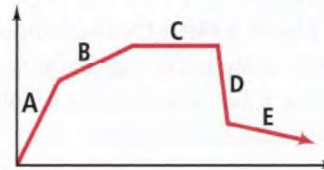


Time (number of hours after noon)	1	3	5	7
Temperature ($^{\circ}\text{F}$)	61	62	58	51

Do you UNDERSTAND?



3. Match one of the labeled segments in the graph below with each of the following verbal descriptions: *rising slowly, constant, and falling quickly.*



4. **Reasoning** Describe a real-world relationship that could be represented by the graph sketched above.



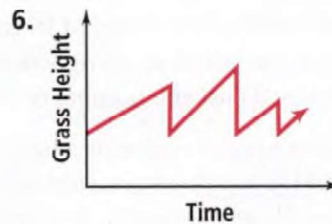
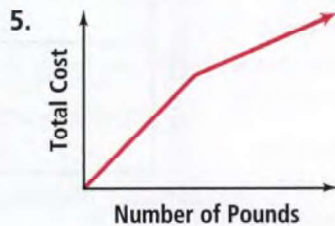
Practice and Problem-Solving Exercises



A Practice

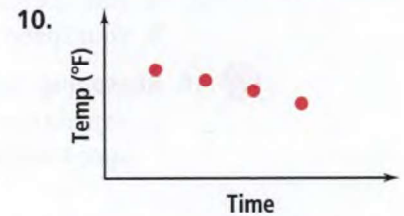
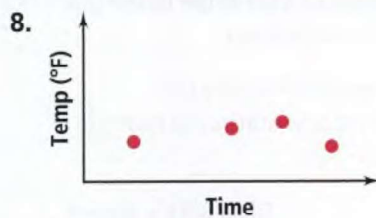
What are the variables in each graph? Describe how the variables are related at various points on the graph.

See Problem 1.



Match each graph with its related table. Explain your answers.

See Problem 2.



A.

Time	Temperature ($^{\circ}\text{F}$)
1 P.M.	91 $^{\circ}$
3 P.M.	89 $^{\circ}$
5 P.M.	81 $^{\circ}$
7 P.M.	64 $^{\circ}$

B.

Time	Temperature ($^{\circ}\text{F}$)
1 P.M.	61 $^{\circ}$
3 P.M.	60 $^{\circ}$
5 P.M.	59 $^{\circ}$
7 P.M.	58 $^{\circ}$

C.

Time	Temperature ($^{\circ}\text{F}$)
1 P.M.	24 $^{\circ}$
3 P.M.	26 $^{\circ}$
5 P.M.	27 $^{\circ}$
7 P.M.	21 $^{\circ}$

Sketch a graph to represent each situation. Label each section.

See Problem 3.

11. hours of daylight each day over the course of one year
12. your distance from the ground as you ride a Ferris wheel
13. your pulse rate as you watch a scary movie

B Apply

- © 14. **Think About a Plan** The *shishi-odoshi*, a popular Japanese garden ornament, was originally designed to frighten away deer. Using water, it makes a sharp rap each time a bamboo tube rises. Sketch a graph that could represent the volume of water in the bamboo tube as it operates.



Tube begins filling.



Full tube begins falling.



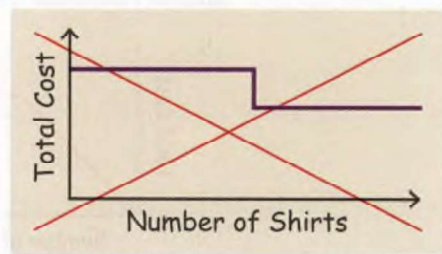
Tube falls and empties water.



Tube rises and hits rock, making noise.

- What quantities vary in this situation?
- How are these quantities related?

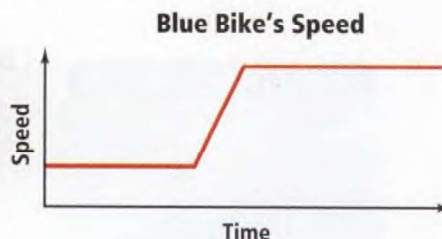
- © 15. **Error Analysis** T-shirts cost \$12.99 each for the first 5 shirts purchased. Each additional T-shirt costs \$4.99 each. Describe and correct the error in the graph at the right that represents the relationship between total cost and number of shirts purchased.



- © 16. **Open-Ended** Describe a real-world relationship between the area of a rectangle and its width, as the width varies and the length stays the same. Sketch a graph to show this relationship.

17. **Skiing** Sketch a graph of each situation. Are the graphs the same? Explain.
- a. your speed as you travel on a ski lift from the bottom of a ski slope to the top
 - b. your speed as you ski from the top of a ski slope to the bottom

- © 18. **Reasoning** The diagram at the left below shows a portion of a bike trail.
- a. Explain whether the graph below is a reasonable representation of how the speed might change for the rider of the blue bike.



- b. Sketch two graphs that could represent a bike's speed over time. Sketch one graph for the blue bike, and the other for the red bike.