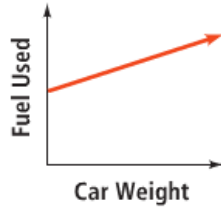4-1 pg. 237 #1-4, 8-14, 17, 19-22

## 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.

Fuel Used

Car Weight

**2.** Describe the relationship between time and temperature in the table below.

| Time (number of hours after noon) | 1 | 3 | 5 | 7 |
|---|---|---|---|---|
| Temperature (°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*.
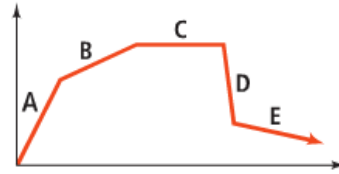
**4. Reasoning** Describe a real-world relationship that could be represented by the graph sketched above.

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

**See Problem 2.**

**8.**

Temp (°F)

Time

**9.**

Temp (°F)

Time

**10.**

Temp (°F)
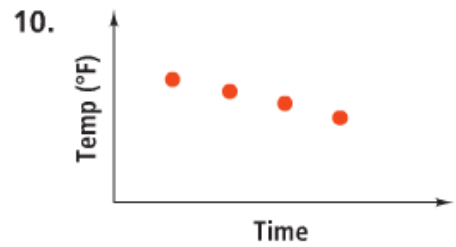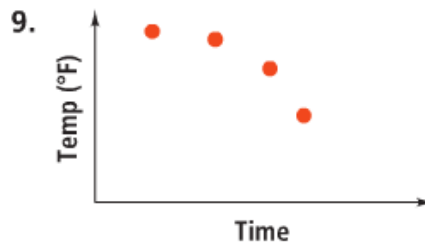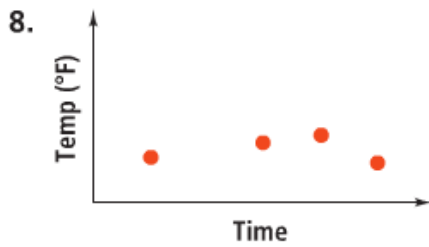
Time

**A.**

| Time | Temperature (°F) |
|---|---|
| 1 P.M. | 91° |
| 3 P.M. | 89° |
| 5 P.M. | 81° |
| 7 P.M. | 64° |

**B.**

| Time | Temperature (°F) |
|---|---|
| 1 P.M. | 61° |
| 3 P.M. | 60° |
| 5 P.M. | 59° |
| 7 P.M. | 58° |

**C.**

| Time | Temperature (°F) |
|---|---|
| 1 P.M. | 24° |
| 3 P.M. | 26° |
| 5 P.M. | 27° |
| 7 P.M. | 21° |

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

**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?

**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

**19. Track** The sketch at the right shows the distance three runners travel during a race. Describe what occurs at times A, B, C, and D. In what order do the runners finish? Explain.

**Three-Person Race**
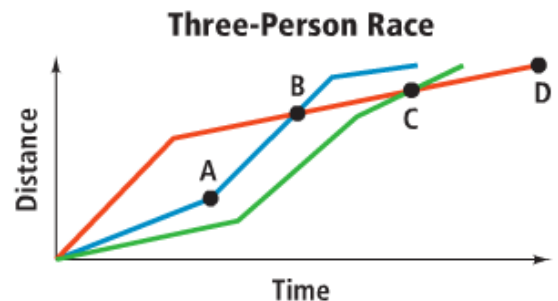


**20. Reasoning** The graph at the right shows the vertical distance traveled as Person A walks up a set of stairs and Person B walks up an escalator next to the stairs. Copy the graph. Then draw a line that could represent the vertical distance traveled as Person C rides the escalator standing still. Explain your reasoning.

**Escalator and Stairs**
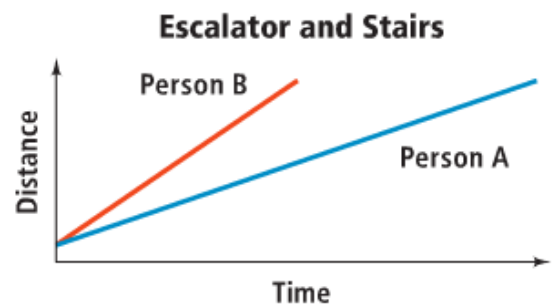
**21.** The graph at the right shows your distance from home as you walk to the bus stop, wait for the bus, and then ride the bus to school. Which point represents a time that you are waiting for the bus?

**Distance From Home**



   Ⓐ A            Ⓒ C

   Ⓑ B            Ⓓ D

**22.** What is the solution of $-2x < 4$?

   Ⓕ $x < 2$         Ⓖ $x > 2$         Ⓗ $x < -2$         Ⓘ $x > -2$