7.5 Practice

Go to **BigIdeasMath.com** to get HELP with solving the exercises.

Review & Refresh

Does the table or equation represent a *linear* or *nonlinear* function? Explain.

1.

x	-5	-1	3	7
y	14	12	10	8

2. $y = x^2 + 8$

Graph the linear equation.

3. $-4x + y = -1$ **4.** $2x - 3y = 12$ **5.** $5x + 10y = 30$

Concepts, Skills, & Problem Solving

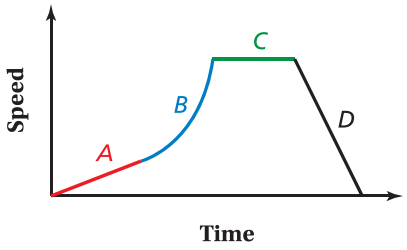
MATCHING DESCRIPTIONS WITH GRAPHS **The graph shows your speed during a run. Match the verbal description with the part of the graph it describes.**
(See Exploration 1, p. 301.)

6. You run at a constant speed.

7. You slow down at a constant rate.

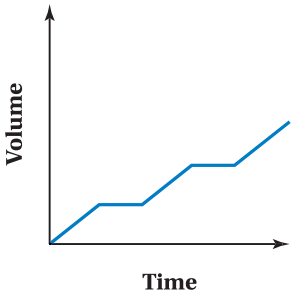
8. You increase your speed at a constant rate.

9. You increase your speed at a faster and faster rate.

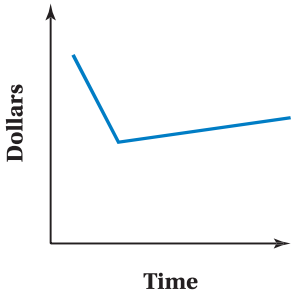


ANALYZING GRAPHS **Describe the relationship between the two quantities.**

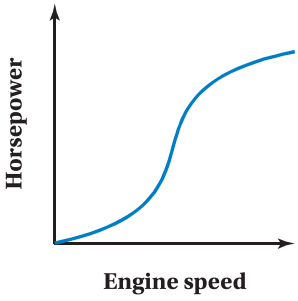
10. Balloon



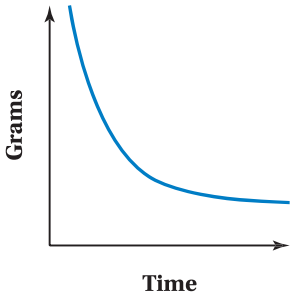
11. Sales



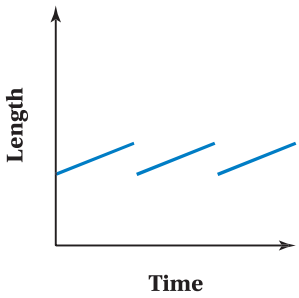
12. Engine Power



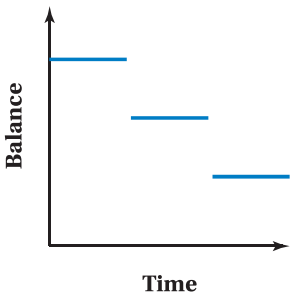
13. Decay



14. Hair

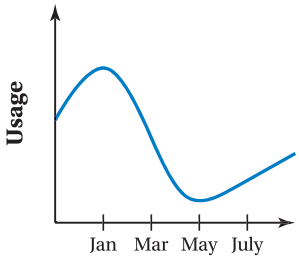


15. Loan



16. **ANALYZING GRAPHS** Write an explanation for the relationship shown in the graph in Exercise 10.

17. **MODELING REAL LIFE** The graph shows the natural gas usage for a house.



a. Describe the change in usage from January to March.

b. Describe the change in usage from March to May.

SKETCHING GRAPHS **Sketch a graph that represents the situation.**

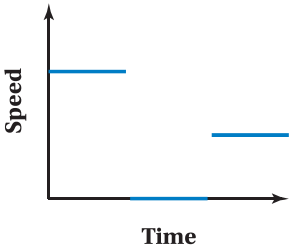
18. The value of a television decreases at a constant rate, and then remains constant.

19. The distance from the ground changes as your friend swings on a swing.

20. The value of a rare coin increases at a faster and faster rate.

21. You are typing at a constant rate. You pause to think about your next paragraph, and then you resume typing at the same constant rate.

22. **CRITICAL THINKING** The graph shows the speed of an object over time.



a. Sketch a graph that shows the distance traveled by the object over time.

b. Describe a possible situation represented by the graphs.

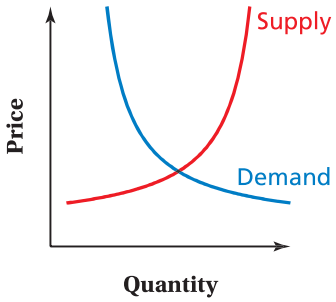
23. **MODELING REAL LIFE** The graph shows the average scores of two bowlers from the start of a season to the end of the season.

a. Describe each bowler's performance.

b. Who had a greater average score most of the season? Who had a greater average score at the end of the season?

c. Write an explanation for the change in each bowler's average score throughout the bowling season.

24. **DIG DEEPER!** You can use a *supply and demand model* to understand how the price of a product changes in a market. The *supply curve* of a particular product represents the quantity suppliers will produce at various prices. The *demand curve* for the product represents the quantity consumers are willing to buy at various prices.



a. Describe and interpret each curve.

b. Which part of the graph represents a surplus? a shortage? Explain your reasoning.

c. The curves intersect at the *equilibrium point*, which is where the quantity produced equals the quantity demanded. Suppose that demand for a product suddenly increases, causing the entire demand curve to shift to the right. What happens to the equilibrium point?