Evaluate each function for the given input values.

20. For $f(x) = x^2 - 5$, find $f(x)$ when $x = 0$ and when $x = 3$.

21. For $g(x) = x^2 + 6$, find $g(x)$ when $x = 1$ and when $x = 2$.

22. For $f(x) = \frac{2}{3}x + 3$, find $f(x)$ when $x = 9$ and when $x = -3$.

23. A mail-order company charges $5 per order plus $2 per item in the order, up to a maximum of 4 items. Write a function to describe the situation. Find the reasonable domain and range for the function.

24. Transportation Air Force One can travel 630 miles per hour. Let h be the number of hours traveled. The function $d = 630h$ gives the distance d in miles that Air Force One travels in h hours.

   a. Identify the independent and dependent variables. Write $d = 630h$ using function notation.

   b. What are reasonable values for the domain and range in the situation described?

   c. How far can Air Force One travel in 12 hours?

25. Complete the table for $g(z) = 2z - 5$.

z	1	2	3	4
g(z)				

26. Complete the table for $h(x) = x^2 + x$.

x	0	1	2	3
h(x)				

27. Estimation For $f(x) = 3x + 5$, estimate the output when $x = -6.89$, $x = 1.01$, and $x = 4.67$.

28. Transportation A car can travel 30 miles on a gallon of gas and has a 20-gallon gas tank. Let g be the number of gallons of gas the car has in its tank. The function $d = 30g$ gives the distance d in miles that the car travels on g gallons.

   a. What are reasonable values for the domain and range in the situation described?

   b. How far can the car travel on 12 gallons of gas?

H.O.T. 29. Critical Thinking Give an example of a real-life situation for which the reasonable domain consists of 1, 2, 3, and 4 and the reasonable range consists of 2, 4, 6, and 8.

H.O.T. 30. ///ERROR ANALYSIS/// Rashid saves $150 each month. He wants to know how much he will have saved in 2 years. He writes the rule $s = m + 150$ to help him figure out how much he will save, where s is the amount saved and m is the number of months he saves. Explain why his rule is incorrect.

31. Write About It Give a real-life situation that can be described by a function. Identify the independent variable and the dependent variable.

Real-World Connections

32. The table shows the volume v of water pumped into a pool after t hours.

   a. Determine a relationship between the time and the volume of water and write an equation.

   b. Identify the independent and dependent variables.

   c. If the pool holds 10,000 gallons, how long will it take to fill?

Amount of Water in Pool	
Time (h)	Volume (gal)
0	0
1	1250
2	2500
3	3750
4	5000