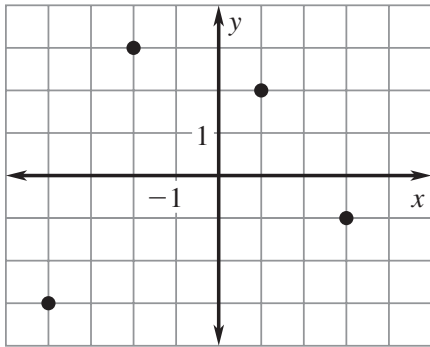


# Answers for 2.1

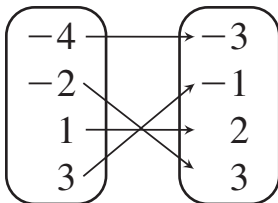
For use with pages 76–79

## 2.1 Skill Practice

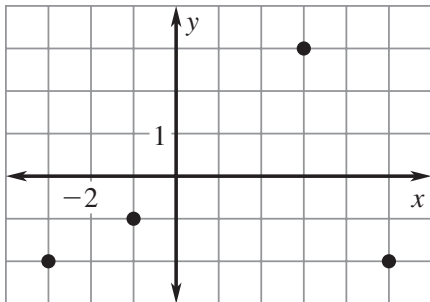
- independent, dependent
- If  $(x, y)$  represents each ordered pair, then each  $x$  is part of the domain and each  $y$  is part of the range.
- domain:  $-4, -2, 1, 3$   
range:  $-3, -1, 2, 3$



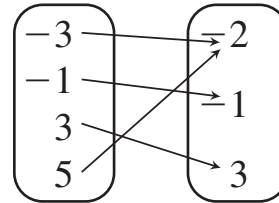
Input      Output



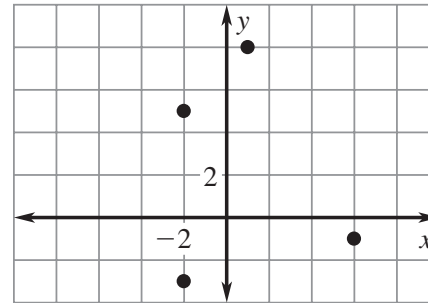
- domain:  $-3, -1, 3, 5$   
range:  $-2, -1, 3$



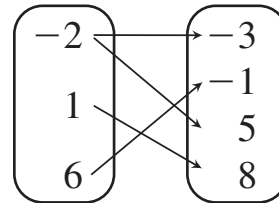
Input      Output



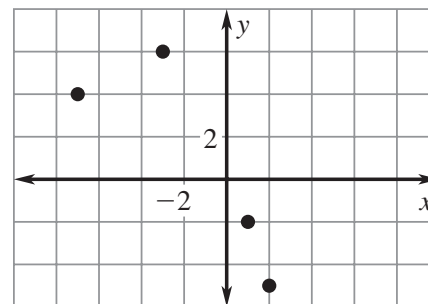
- domain:  $-2, 1, 6$   
range:  $-3, -1, 5, 8$



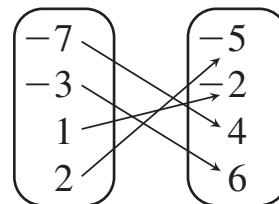
Input      Output



- domain:  $-7, -3, 1, 2$   
range:  $-5, -2, 4, 6$

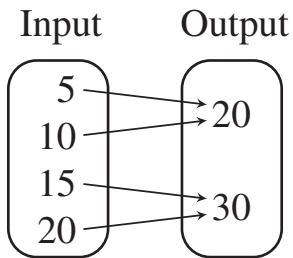
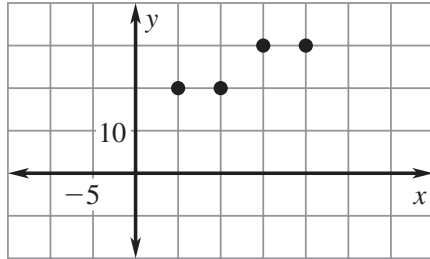


Input      Output

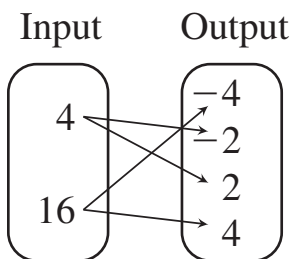
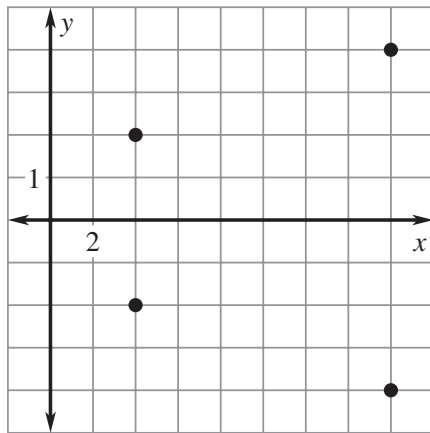


**Answers for 2.1** *continued*  
For use with pages 76–79

- 7.** domain: 5, 10, 15, 20  
range: 20, 30



- 8.** domain: 4, 16  
range:  $-4, -2, 2, 4$



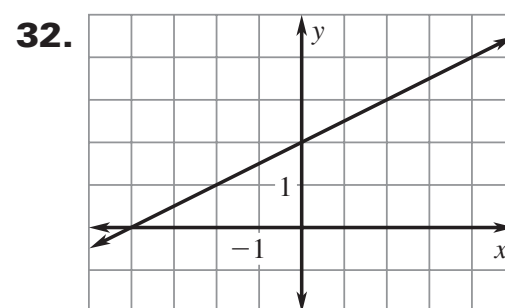
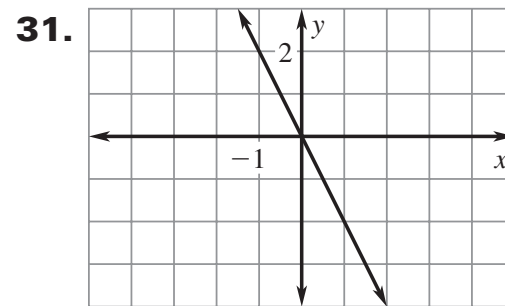
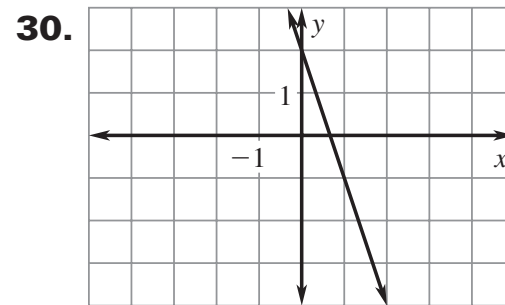
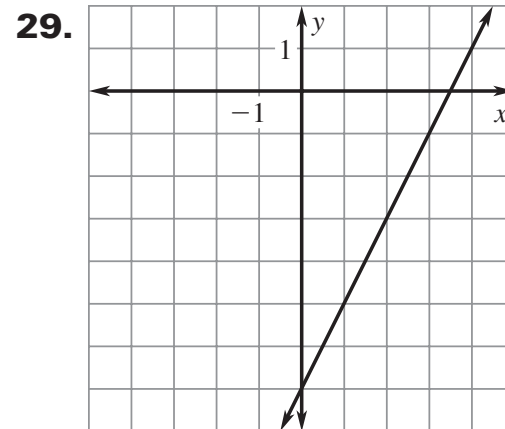
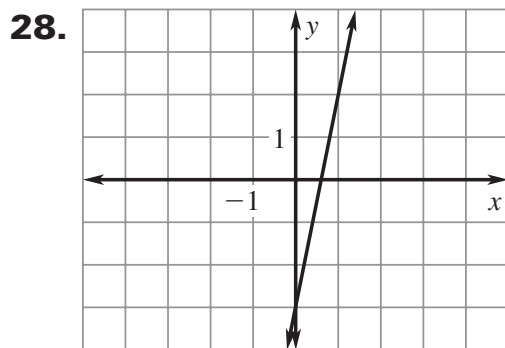
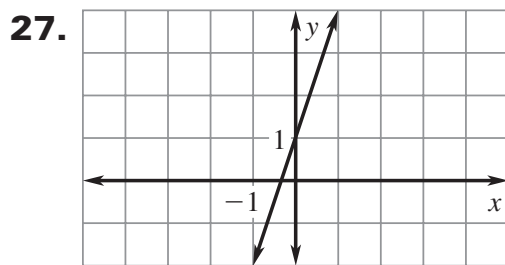
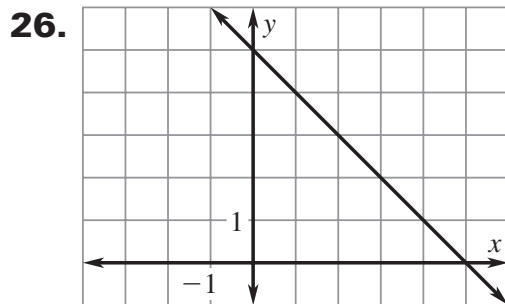
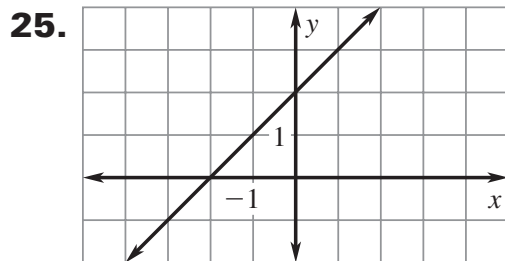
- 9.** B

- 10.** Yes; each input has exactly one output.
- 11.** Yes; each input has exactly one output.
- 12.** No; the inputs  $-1$  and  $5$  have more than one output.
- 13.** Yes; each input has exactly one output.
- 14.** An output can be mapped to more than once; the relation given by the ordered pairs  $(-4, 2)$ ,  $(-1, 5)$ ,  $(3, 6)$ , and  $(7, 2)$  is a function because each input has exactly one output.
- 15.**  $x$  is the input and  $y$  is the output, so there should be one value of  $y$  for each value of  $x$ ; the relation given by the table is not a function because the inputs  $1$  and  $0$  each have more than one output.
- 16.** Yes, each input has exactly one output.
- 17.** No; the input  $-2$  has more than one output.
- 18.** Yes; each input has exactly one output.
- 19.** No; the input  $-1$  has more than one output.
- 20.** B
- 21.** function      **22.** function

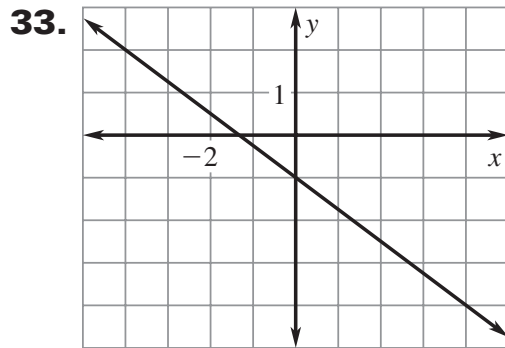
**Answers for 2.1** *continued*  
 For use with pages 76–79

**23.** not a function

**24.** *Sample answer:* The vertical line represents each input, so if the vertical line crosses the graph more than once, then that input has more than one output and is not a function.



**Answers for 2.1** *continued*  
For use with pages 76–79



**34.** linear; 23

**35.** not linear; 10

**36.** not linear; 14

**37.** linear; 6

**38.** not linear;  $-208$

**39.** linear;  $-3$

**40.** *Sample answer:* This is the only graph that passes the vertical line test.

$$\begin{aligned} \mathbf{41.} \quad f(2a) &= f(a + a) = f(a) + f(a) \\ &= 2 \cdot f(a), f(0) = f(0 + 0) = \\ &f(0) + f(0) = 2f(0), 2f(0) = f(0), \\ &2f(0) - f(0) = f(0) - f(0), \\ &f(0) = 0 \end{aligned}$$

**2.1 Problem Solving**

**42.** No; the inputs 24, 25, and 26 have more than one output.

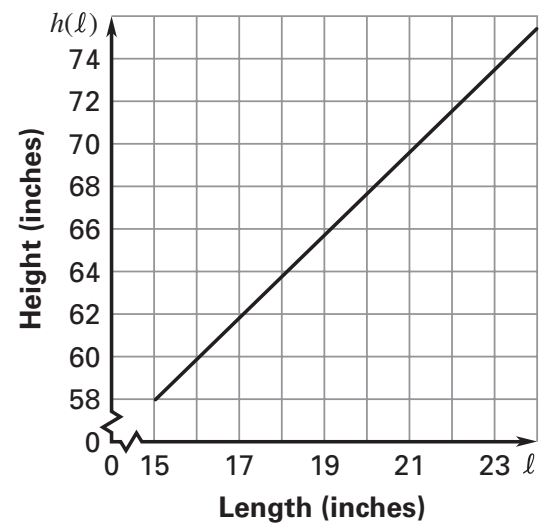
**43.** Yes; each input has exactly one output.

**44.** 64;  $V(4)$  represents the volume of a cube with edge length of 4.

**45.** about 905;  $V(6)$  represents the volume of a sphere with radius 6.

**46.** domain:  $0 \leq t \leq 30$ ,  
range:  $1.89 \leq p(t) \leq 6.21$ ;  
over the years 1974–2004 the price of a theater ticket ranged from \$1.89 in 1974 to \$6.21 in 2004.

**47. a.**



domain:  $15 \leq l \leq 24$ ,  
range:  $57.95 \leq h(l) \leq 75.5$

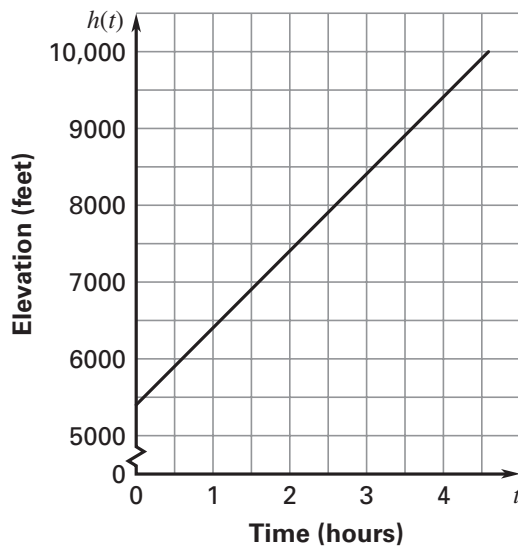
**b.** 59 in. or 4 ft 11 in.

**c.** 21.7 in.

# Answers for 2.1 *continued*

For use with pages 76–79

48.



domain:  $0 \leq t \leq 4.7$

range:  $5400 \leq h(t) \leq 10,100$ ;  
8900 ft

49. a. domain: 11,350,000,  
12,280,000, 12,420,000,  
15,980,000, 18,980,000,  
20,850,000, 33,870,000  
range: 20, 21, 27, 31, 34, 55

- b. Yes; each input  $p$  has exactly one output.  
c. No; the input 21 has more than one output.

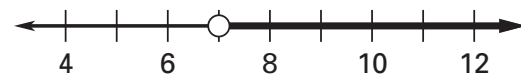
50. a. Yes. *Sample answer:* For each merchandise cost, there is exactly one shipping cost.

- b. No. *Sample answer:* For each shipping cost, there are many possible merchandise costs.

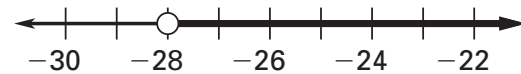
## 2.1 Mixed Review

51.  $-\frac{1}{2}$       52.  $-4$   
53.  $-\frac{1}{2}$       54.  $\frac{1}{2}$   
55.  $5$       56.  $-6$   
57.  $-2$       58.  $-1\frac{2}{3}$   
59.  $5\frac{1}{3}$       60.  $1\frac{3}{4}$

61.  $x > 7$



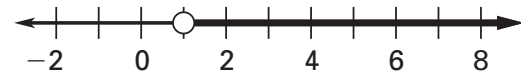
62.  $x > -28$



63.  $x \geq 4$



64.  $x > 1$



65.  $-1 < x < 1$



66.  $x \leq 3$  or  $x \geq 4$

