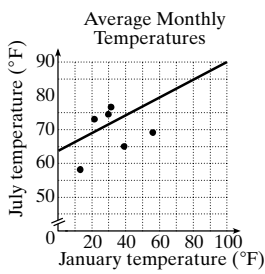**4.**

Average Monthly Temperatures

5. About 60°F

Guided Problem Solving 9-1

1. Describe what a graph looks like when both sets of values increase. **2.** the values of the variables shown on the graph's horizontal and vertical axes **3.** farther to the right **4.** farther up **5.** Points farther to the right are located higher up on the coordinate plane. **6.** Sample answer: Distance and time; as time increases, the distance also increases. **7.** Sample answer: Points farther to the right are located lower on the coordinate plane.

Practice 9-2

1. geometric; start with 2 and multiply by 3 repeatedly
2. geometric; start with 5 and multiply by –2 repeatedly
3. arithmetic; start with 3 and add 2 repeatedly **4.** neither
5. neither **6.** arithmetic; start with 17 and add –1 repeatedly
7. geometric; start with 50 and multiply by –1 repeatedly
8. neither **9.** $11, -10, 9$ **10.** $9, 3, 1$ **11.** $54, 110, 222$; or $47, 75, 110$ **12.** $20, 27, 35$ **13.** $2, -6, 18, -54, 162$; geometric
14. $27, 18, 9, 0, -9$; arithmetic **15.** $18, 1.8, 0.36, 0.108, 0.0432$; neither

Guided Problem Solving 9-2

1. A conjecture is a prediction that suggests what you expect will happen. **2.** After 4 months of training, he will be able to run an 8-minute mile. **3.** Determine whether Mario's conjecture is correct. **4.** 8 min 45 s **5.** 8 min 30 s; 8 min 15 s; 8 min **6.** yes
7. Sample answer: Start with 8 minutes and add 15 s each month. See if after 4 months the total time is 9 min. **8.** After 6 months Linda can walk a mile in 11 min. Her conjecture is not valid.

Practice 9-3

1. 40 **2.** 1 **3.** $n + 34$; 134 **4.** $2n + 6$; 206 **5.** $m = 8$; $n = 30$
6. $p = 6$; $q = 37$ **7a.**

7b.
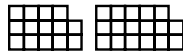
Figure Number	1	2	3	4	5
Number of Squares	5	8	11	14	17

$3n + 2$

7c. 242 **8.** $6n$; 120 **9.** $3n$; 60
10.

Weight (lb)	1	2	3	4
Cost ($)	2.39	4.78	7.17	9.56

Guided Problem Solving 9-3

1. the second row **2.** the cost of a 0.5-h lesson **3.** Determine the cost for 1-h, 1.5-h, and 2-h lessons. **4.** $12.50 **5.** $1 = 0.5 \times 2$
6. $25.00 **7.** $12.50 **8.** $37.50 **9.** $50.00 **10.** For the cost for 1 hour, multiply $12.50 by 2. For the cost for 1.5 hours, multiply $12.50 by 3. For the cost for 2 hours, multiply $12.50 by 4.
11.

Time (h)	0.5	1	1.5	2
Cost ($)	15.75	**31.50**	**47.25**	**63.00**

Practice 9-4

1. 2; 4; 6; 8 **2.** 5; 6; 7; 8 **3.** 0; 3; 8; 15 **4.** -2; -4; -6; -8
5. 4; 7; 10; 13 **6.** 5; 2; -1; -4 **7.** 10; 14; 18; 22 **8.** -4; -3; -2; -1 **9.** 9; 11; 13; 15 **10.** $y = x + 5$ **11.** $y = 4x$ **12.** $y = -3x - 3$ **13.** $y = 2x + 3$ **14.** $y = 3x + 1$ **15.** $y = -2x + 1$
**16a.** $y = 45x$ **16b.** 1,125 words **16c.** 445 minutes

Guided Problem Solving 9-4

1. A function rule tells you what to do to the input in order to get the output. **2.** Write a function rule for the amount of money you put in your piggy bank on any given day of July. **3.** the days in July **4.** the amount of money you put in your piggy bank
5. n **6.** $.50 is half of $1; $1 is half of $2 **7.** Multiply by 0.5.
8. $a = 0.5n$ **9.** $0.50(1) = 0.50, 0.50(2) = 1.00, 0.50(3) = 1.50$
10. $a = 0.1n$

Practice 9-5

1. 60 mi/h **2.** yes **3.** $d = 60t$
4. Sample answer:

Input	Output
1	60
2	120
3	180
4	240
5	300
6	360

5.

6.
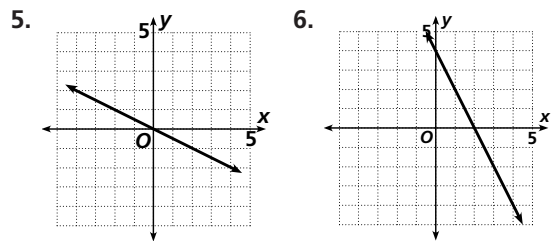
7a. $y = \frac{2}{3}x$ **7b.** 32 mi

Guided Problem Solving 9-5

1. Write a rule for the function represented by the table.
2. 362 mi **3.** 181 mi **4.** hours; distance **5.** $d = 181t$
6. $181(2) = 362, 181(4) = 724, 181(6) = 1,086$ **7.** $d = 17,500t$