

# Extra Practice

## Chapter 9

**9.1** Graph the function. Compare the graph with the graph of  $y = x^2$ .

1.  $y = 4x^2$

2.  $y = -5x^2$

3.  $y = \frac{1}{2}x^2$

4.  $y = -\frac{2}{5}x^2$

5.  $y = x^2 + 3$

6.  $y = x^2 - 2$

7.  $y = 3x^2 + 4$

8.  $y = -4x^2 - 3$

**9.2** Graph the function. Label the vertex and axis of symmetry.

9.  $y = x^2 + 4x + 4$

10.  $y = -x^2 - 2x + 3$

11.  $y = 2x^2 - 6x + 5$

12.  $y = 3x^2 + 12x + 8$

13.  $y = -2x^2 + 6$

14.  $y = \frac{3}{4}x^2 - 3x$

**9.3** Solve the equation by graphing.

15.  $x^2 + 3x - 10 = 0$

16.  $x^2 + 14 = 9x$

17.  $-x^2 + 3x = -18$

18.  $2x^2 + 3x - 20 = 0$

19.  $2x^2 + x = 6$

20.  $\frac{1}{2}x^2 - x = 12$

**9.4** Solve the equation. Round the solutions to the nearest hundredth, if necessary.

21.  $2x^2 - 20 = 78$

22.  $3y^2 + 16 = 4$

23.  $16y^2 - 6 = 3$

24.  $48 - x^2 = -52$

25.  $5m^2 - 5 = 10$

26.  $2 - 5t^2 = 4$

**9.5** Solve the equation by completing the square. Round the solutions to the nearest hundredth, if necessary.

27.  $x^2 + 4x - 21 = 0$

28.  $g^2 - 10g = 24$

29.  $4m^2 + 8m - 7 = 0$

**9.6** Use the quadratic formula to solve the equation. Round the solutions to the nearest hundredth, if necessary.

30.  $h^2 + 6h - 72 = 0$

31.  $3x^2 - 7x + 2 = 0$

32.  $2k^2 - 5k + 2 = 0$

33.  $n^2 + 1 = 5n$

34.  $2z + 4 = 3z^2$

35.  $5x^2 - 4x = 2$

**9.7** Solve the system.

36.  $y = -x^2 + 5x - 4$   
 $y = 2x - 4$

37.  $y = \frac{2}{3}x^2 - 3x - 1$   
 $y = -x - 1$

38.  $y = -2x^2 + 4x - 1$   
 $y = -4x - 7$

**9.8** Tell whether the table of values represents a *linear function*, an *exponential function*, or a *quadratic function*. Then write an equation for the function.

39.

x	-1	0	1	2	3
y	3	0	3	12	27

40.

x	0	1	2	3	4
y	-5	-2	1	4	7

41.

x	1	2	3	4	5
y	1	2	4	8	16

42.

x	-2	-1	0	1	2
y	18	14	10	6	2

**9.9** 43. Linear Function 1 has equation  $2x - 5y = -12$ . The graph of Linear Function 2 contains  $(-3, -3)$ ,  $(0, 2)$ ,  $(3, 7)$ , and  $(6, 12)$ . Which function is increasing more rapidly?