

Extra Practice: Skills and Word Problems

- **Lesson 10-1** Without graphing, describe how each graph differs from the graph of $y = x^2$.

1. $y = 3x^2$

2. $y = -4x^2$

3. $y = -0.5x^2$

4. $y = 0.2x^2$

5. $y = x^2 - 4$

6. $y = x^2 + 1$

7. $y = 2x^2 + 5$

8. $y = -0.3x^2 - 7$

- **Lesson 10-2** Identify the axis of symmetry and the vertex of each function.

9. $y = 3x^2$

10. $y = -2x^2 + 1$

11. $y = 0.5x^2 - 3$

12. $y = -x^2 + 2x + 1$

13. $y = 3x^2 + 6x$

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

15. $y = 2x^2 - 9$

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

17. $y = x^2 - 8x$

Graph each quadratic inequality.

18. $y > x^2 - 4$

19. $y < 2x^2 + x$

20. $y \leq x^2 + x - 2$

- **Lessons 10-3 and 10-4** Solve each equation. If the equation has no solution, write *no solution*.

21. $x^2 = 36$

22. $x^2 + x - 2 = 0$

23. $c^2 - 100 = 0$

24. $9d^2 = 25$

25. $(x - 4)^2 = 100$

26. $3x^2 = 27$

27. $2x^2 - 54 = 284$

28. $7n^2 = 63$

29. $h^2 + 4 = 0$

- **Lessons 10-5 and 10-6** Solve each equation. If the equation has no solution, write *no solution*.

30. $x^2 + 6x - 2 = 0$

31. $x^2 - 5x = 7$

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

33. $2x^2 - 4x + 1 = 0$

34. $3x^2 + x + 5 = 0$

35. $\frac{1}{2}x^2 - 3x - 8 = 0$

36. $x^2 + 8x + 4 = 0$

37. $x^2 - 2x - 6 = 0$

38. $-3x^2 + x - 7 = 0$

39. $x^2 + 5x + 6 = 0$

40. $d^2 - 144 = 0$

41. $c^2 + 6 = 2 - 4c$

42. $x^2 + 4x = 2x^2 - x + 6$

43. $3x^2 + 2x - 12 = x^2$

44. $r^2 + 4r + 1 = r$

45. $d^2 + 2d + 10 = 2d + 100$

46. $3c^2 + c - 10 = c^2 - 5$

47. $t^2 - 3t - 10 = 0$

48. **Agriculture** You are planting a rectangular garden. It is 5 feet longer than 3 times its width. The area of the garden is 250 ft^2 . Find the dimensions of the garden.

- **Lesson 10-7** Find the number of solutions of each equation.

49. $3x^2 + 4x - 7 = 0$

50. $5x^2 - 4x = -6$

51. $x^2 - 20x + 101 = 1$

52. $2x^2 - 8x + 9 = 4$

53. $4x^2 - 5x + 6 = 0$

54. $x^2 - 2x + 7 = 0$

- **Lesson 10-8** Graph each set of data. Which model is most appropriate for each set?

55. $(2, 4), (4, 4), (1, 2), (5, 1.5)$

56. $(3, 8), (4, 6), (5, 5), (6, 4), (7, 3)$

57. $(0, 7), (1, 3), (3, 0.5), (2, 1)$