

## Chapter 9 Review

### Find the roots of the quadratic. (9.1)

- |                                    |                                     |                           |
|------------------------------------|-------------------------------------|---------------------------|
| 1. $(x - 7)(x + 9) = 0$            | 7. $x^2 + 7x + 6 = 0$               | 12. $a^2 = 64$            |
| 2. $(x + 0.1)(x + 10) = 0$         | 8. $(x - 2.8)(x - \frac{1}{2}) = 0$ | 13. $9x^2 + 6x = -1$      |
| 3. $(x - 2.2)(x + 8) = 0$          | 9. $4x^2 = 1$                       | 14. $+7b = b^2 + 10$      |
| 4. $(x - 0.5)(x - 7.5) = 0$        | 10. $b^2 - 14b = -49$               | 15. $5a^2 - 38a - 16 = 0$ |
| 5. $(x - \frac{3}{8})(x + 12) = 0$ | 11. $2x^2 - 13x + 15 = 0$           | 16. $6x^2 + 13x = +28$    |
| 6. $(x + 13)(x + 6) = 0$           |                                     | 17. $z^2 = 49$            |

### Find the roots of the quadratic by completing the square. (9.2)

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|---------------------------|--------------------------|---------------------------|
| 18. $2y^2 + 8y = 10$      | 24. $2a^2 + 10a + 8 = 0$ | 30. $x^2 - 12x - 11 = 0$  |
| 19. $3a^2 + 12a - 15 = 0$ | 25. $x^2 + 4x + 1 = 0$   | 31. $a^2 - 24a - 8 = 0$   |
| 20. $3r^2 + 24r - 27 = 0$ | 26. $y^2 + 8y - 7 = 0$   | 32. $y^2 + 8y + 4 = 0$    |
| 21. $2x^2 + 7x - 15 = 0$  | 27. $x^2 + 12x + 5 = 0$  | 33. $4x^2 - 24x - 13 = 0$ |
| 22. $2y^2 + 6y = 8$       | 28. $x^2 + 20x - 9 = 0$  | 34. $x^2 - 32x - 12 = 0$  |
| 23. $2x^2 + 9x - 5 = 0$   | 29. $y^2 + 16y - 12 = 0$ | 35. $5y^2 - 8y + 2 = 0$   |

### Using the quadratic formula, find the roots of the quadratic. (9.3)

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|---------------------------|--------------------------|--------------------------|
| 36. $x^2 + x - 5 = 0$     | 41. $5x^2 - 10x - 3 = 0$ | 46. $x^2 - 8x - 24 = 0$  |
| 37. $x^2 - 3x - 9 = 0$    | 42. $x^2 - 2x - 5 = 0$   | 47. $2x^2 - x - 7 = 0$   |
| 38. $2x^2 + 5x - 2 = 0$   | 43. $8x^2 + 9x - 4 = 0$  | 48. $5x^2 + 6x - 28 = 0$ |
| 39. $x^2 + 9x - 8 = 0$    | 44. $4x^2 - 15x + 6 = 0$ | 49. $6x^2 - x + 13 = 0$  |
| 40. $3x^2 + 12x - 10 = 0$ | 45. $3x^2 + 7x - 2 = 0$  | 50. $11x^2 + x - 1 = 0$  |

### Use the discriminant to determine if the quadratic has roots. (9.4)

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|---------------------------|---------------------------|---------------------------|
| 51. $x^2 + 4x + 1 = 0$    | 56. $3x^2 - 10x + 18 = 0$ | 61. $x^2 - 8x + 14 = 0$   |
| 52. $x^2 - 11x + 8 = 0$   | 57. $x^2 + 10x + 5 = 0$   | 62. $12x^2 - 11x + 3 = 0$ |
| 53. $3x^2 + 12x + 34 = 0$ | 58. $7x^2 + 13x + 4 = 0$  | 63. $3x^2 + 17x + 24 = 0$ |
| 54. $x^2 + 15x + 14 = 0$  | 59. $x^2 - 2x + 1 = 0$    | 64. $3x^2 - 14x + 15 = 0$ |
| 55. $4x^2 + 12x + 9 = 0$  | 60. $5x^2 + 12x + 8 = 0$  | 65. $4x^2 + 15x + 16 = 0$ |

### Use a calculator to find the value of y when x is 12. Round off to the nearest hundredth. (9.4)

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|-----------------------------|----------------------------------|-----------------------------|
| 66. $y = 56,800(1 - 0.4)^x$ | 69. $y = 116,000,000(1 - 0.3)^x$ | 72. $y = 8,000(1 + 0.15)^x$ |
| 67. $y = 7,800,000(0.44)^x$ | 70. $y = 440,000(0.06)^x$        | 73. $y = 1,050,000(0.08)^x$ |
| 68. $y = 24(1 + 0.9)^x$     | 71. $y = 0.0407(1 - 0.03)^x$     | 74. $y = 5,000(1 + 0.77)^x$ |

### Solve. (9.4)

75. At the end of his first birthday, Damian receives a gift from his grandfather for \$2,500. If his parents buy a government bond that yields 5.8% per year, how much money would Damian have when he turns 18 years old?
76. A sugar-cane stalk that yields 3.2 ounces of refined sugar loses 9% of its sugar content per day. How much sugar is left in the stalk after one week?