

EXTRA PRACTICE Solving Quadratics

Solve by completing the square to obtain exact solutions.

- 27. $x^2 + 6x = 7$
- 28. $x^2 + 8x = -15$
- 29. $x^2 = 8x - 9$
- 30. $x^2 = 22 + 10x$
- 31. $x^2 + 8x + 25 = 0$
- 32. $x^2 + 6x + 13 = 0$
- 33. $3x^2 + 5x - 2 = 0$
- 34. $2x^2 - 5x - 3 = 0$

Use the quadratic formula to find exact solutions.

- 35. $x^2 - 2x = 15$
- 36. $x^2 + 4x = 5$
- 37. $5m^2 + 3m = 2$
- 38. $2y^2 - 3y - 2 = 0$
- 39. $3x^2 + 6 = 10x$
- 40. $3t^2 + 8t + 3 = 0$
- 41. $x^2 + x + 2 = 0$
- 42. $x^2 + 1 = x$
- 43. $5t^2 - 8t = 3$
- 44. $5x^2 + 2 = x$
- 45. $3x^2 + 4 = 5x$
- 46. $2t^2 - 5t = 1$
- 47. $x^2 - 8x + 5 = 0$
- 48. $x^2 - 6x + 3 = 0$
- 49. $3x^2 + x = 5$
- 50. $5x^2 + 3x = 1$
- 51. $2x^2 + 1 = 5x$
- 52. $4x^2 + 3 = x$
- 53. $5x^2 + 2x = -2$
- 54. $3x^2 + 3x = -4$

For each of the following, find the discriminant, $b^2 - 4ac$, and then determine whether one real-number solution, two different real-number solutions, or two different imaginary-number solutions exist.

- 55. $4x^2 = 8x + 5$
- 56. $4x^2 - 12x + 6 = 0$
- 57. $x^2 + 3x + 4 = 0$
- 58. $x^2 - 2x + 4 = 0$
- 59. $5t^2 - 7t = 0$
- 60. $5t^2 - 4t = 11$

Find the zeros of the function.

- 61. $f(x) = x^2 + 9x + 5$
- 62. $f(x) = x^2 - x - 2$
- 63. $f(x) = x^2 - 3x - 3$
- 64. $f(x) = x^2 + 8x + 2$
- 65. $f(x) = x^2 - 5x + 1$
- 66. $f(x) = x^2 - 3x - 7$
- 67. $f(x) = x^2 + 2x - 5$
- 68. $f(x) = x^2 - x - 4$
- 69. $f(x) = 2x^2 - x + 4$
- 70. $f(x) = 2x^2 + 3x + 2$
- 71. $f(x) = 3x^2 - x - 1$
- 72. $f(x) = 3x^2 + 5x + 1$
- 73. $f(x) = 5x^2 - 2x - 1$
- 74. $f(x) = 4x^2 - 4x - 5$
- 75. $f(x) = 4x^2 + 3x - 3$
- 76. $f(x) = x^2 - 9x + 3$

Solve.

- 77. $x^4 + 2 = 0$
- 78. $x^4 + 3 = 0$
- 79. $x^4 + 3 = 10$

- 76. $-3 \pm 2\sqrt{3}$
- 77. $1, 4, \frac{5 \pm \sqrt{37}}{2}$
- 78. $\frac{5}{1 \pm \sqrt{6}}$
- 79. $\frac{5}{1 \pm \sqrt{6}}$
- 80. $-\frac{4}{3} \pm \frac{4}{\sqrt{7}}$
- 81. $\frac{6}{1 \pm \sqrt{13}}$
- 82. $\frac{6}{-5 \pm \sqrt{13}}$
- 83. $\frac{4}{1 \pm \sqrt{17}}$
- 84. $\frac{4}{1 \pm \sqrt{17}}$
- 85. $\frac{3}{-4 \pm \sqrt{10}}$
- 86. $\frac{2}{5 \pm \sqrt{21}}$
- 87. $\frac{2}{3 \pm \sqrt{37}}$
- 88. $\frac{2}{3 \pm \sqrt{21}}$
- 89. $\frac{2}{3 \pm \sqrt{21}}$
- 90. $\frac{2}{3 \pm \sqrt{21}}$
- 91. $\frac{2}{3 \pm \sqrt{21}}$
- 92. $\frac{2}{3 \pm \sqrt{21}}$
- 93. $\frac{2}{3 \pm \sqrt{21}}$
- 94. $\frac{2}{3 \pm \sqrt{21}}$
- 95. $\frac{2}{3 \pm \sqrt{21}}$
- 96. $\frac{2}{3 \pm \sqrt{21}}$
- 97. $\frac{2}{3 \pm \sqrt{21}}$
- 98. $\frac{2}{3 \pm \sqrt{21}}$
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