# Alternative Strategies for Solving Quadratic Equations

Give the quadratic, linear, and constant terms of the following functions.

1) $y = 3x^2 + 4x + 5$    2) $d = -10 + 8m - m^2$    3) $y = 3x + 7$    4) $y = 3(4p^2 - 6)$

5) $y = 5x + 11$    6) $k = 12j^2$    7) $k = 7j^2 - 13j + 11$    8) $y = 2x^2 + 4x$

Give the values of a, b, and c in the following quadratic functions.

9) $y = 5x^2 - 12x + 8$    10) $y = 3x^2 - 10$    11) $y = -2x^2$    12) $y = (2x + 5)(x - 3)$

13) $v = 2t$    14) $p = (n + 7)(3n - 13)$    15) $w = 2v^2 + 6v - 10$    16) $y = 5x^2 - 12$

Factor the following polynomials.

17) $x^2 + 6x + 9$    18) $x^2 - 18x + 81$    19) $q^2 + 2q + 1$    20) $d^2 - 14d + 49$

21) $9t^2 + 24t + 16$    22) $4p^2 - 20p + 25$    23) $16r^2 - 56r + 49$    24) $25x^2 + 60x + 36$

Find the value of c that will make the following polynomials a perfect square.

25) $k^2 + 12k + c$    26) $q^2 - 8q + c$    27) $p^2 + 10p + c$    28) $k^2 - 20k + c$

29) $x^2 + 4x + c$    30) $m^2 - 2m + c$    31) $d^2 + 16d + c$    32) $x^2 - 26x + c$

Solve each equation by completing the square.

33) $x^2 + 6x = 0$    34) $0 = d^2 + 10d$    35) $0 = f^2 + 8f$    36) $h^2 + 12h = 0$

37) $h^2 + 6h + 5 = 0$    38) $0 = x^2 + 10x + 9$    39) $0 = k^2 + 8k + 12$    40) $x^2 + 12x + 27 = 0$

Use the quadratic formula to solve each equation.

41) $d^2 + 6d + 5 = 0$    42) $0 = f^2 + 10f + 16$    43) $0 = j^2 + 8j + 12$    44) $k^2 + 12k + 27 = 0$

45) $m^2 + 2m - 8 = 0$    46) $p^2 + 8p + 7 = 0$    47) $0 = x^2 - 9x + 18$    48) $0 = x^2 - 4x - 12$

49) $0 = 3x^2 + 11x + 10$    50) $0 = 2x^2 - 7x - 15$    51) $2q^2 - 9q + 10 = 0$    52) $3t^2 + 14t + 8 = 0$