

Solving Quadratic Equations

QF - quadratic formula

F - factoring

SR - square roots

CTS - comp. the square

Choose the best method to solve the following:

(3 have no solution)

1. $c^2 + 3c + 1 = 0$ $D = 3^2 - 4(1)(1) = 5$ QF $x = \frac{-3 \pm \sqrt{5}}{2(1)}$ $x = \frac{-3 \pm \sqrt{5}}{2}$	2. $\sqrt{(x-1)^2} = 9$ SR $x-1 = \pm 3$ $x = \pm 3 + 1$ $x = 4, -2$	3. $x^2 - 7x = 0$ F $x(x-7) = 0$ $x = 0, 7$
4. $2m^2 + m - 1 = 0$ F $(2m-1)(m+1) = 0$ $m = 1/2, -1$	5. $9x^2 + 24x = -16$ F $9x^2 + 24x + 16 = 0$ $(3x+4)(3x+4) = 0$ $x = -4/3$	6. $4p^2 - p + 3 = 0$ QF $D = (-1)^2 - 4(4)(3) = -49$ no solution
7. $x^2 - 9x = -20$ F $x^2 - 9x + 20 = 0$ $(x-4)(x-5) = 0$ $x = 4, 5$	8. $q^2 + 4q + 11 = -10$ CTS $q^2 + 4q + 4 = -21 + 4$ $(q+2)^2 = -17$ no solution	9. $k(k+5) = 0$ F $k = 0, -5$
10. $y^2 - 7y + 4 = 0$ QF $D = (-7)^2 - 4(1)(4) = 33$ $x = \frac{7 \pm \sqrt{33}}{2(1)}$ $x = \frac{7 \pm \sqrt{33}}{2}$	11. $3x^2 - 48 = 0$ F $3(x^2 - 16) = 0$ $3(x-4)(x+4) = 0$ $x = 4$	12. $3n^2 - 5n - 9 = 0$ QF $D = (-5)^2 - 4(3)(-9) = 133$ $x = \frac{5 \pm \sqrt{133}}{2(3)}$ $x = \frac{5 \pm \sqrt{133}}{6}$
13. $m^2 - 4m = -4$ F $m^2 - 4m + 4 = 0$ $(m-2)(m-2) = 0$ $m = 2$	14. $4r^2 = 100$ SR $r^2 = 25$ $r = \pm \sqrt{25}$ $r = \pm 5$	15. $3r^2 + 12 = 0$ QF $D = 0^2 - 4(3)(12) = -144$ no solution
16. $2t^2 + 7t = -6$ F $2t^2 + 7t + 6 = 0$ $(2t+3)(t+2) = 0$ $t = -3/2, -2$	17. $5x^2 + 13x - 1 = 0$ QF $D = (13)^2 - 4(5)(-1) = 189$ $x = \frac{-13 \pm \sqrt{189}}{2(5)}$ $x = \frac{-13 \pm 3\sqrt{21}}{10}$	18. $a^2 = 8a$ F $a^2 - 8a = 0$ $a(a-8) = 0$ $a = 0, 8$