

## Quadratic Equations

Solve the following quadratic equations or explain why there is no solution.

- $x^2 + 6x - 16 = 0$
- $2x^2 - 2x - 4 = 0$
- $2x^2 + 3x - 1 = 0$
- $9x^2 - 12x + 4 = 0$
- $3x^2 + 4x + 5 = 0$
- $4x^2 + 3x = 1$
- $2x^2 = 4x - 5$
- $2(x^2 + 3x) = x^2 - 6$
- $2x^2 + x - 1 = 3x$
- $x^2 - 8x - 20 = 0$
- $x^2 + 6x - 31 = 0$
- $x^2 - 10x + 9 = 0$
- $x^2 - 8x + 7 = 0$
- $x^2 - 4x + 8 = 0$
- $x^2 + 12x = 0$
- $x^2 - 6 = 3x$
- $x^2 - 24 = 10x$
- $x^2 = 6x + 7$
- $x^2 + 4x + 13 = 0$
- $(x - 1)^2 = 9$
- $(2x + 1)^2 = 100$
- $(1 - 2x)^2 + 13 = 0$
- $16 = (3x - 5)^2$
- $4(2x + 3)^2 = 9$
- $25(x + 1)^2 = 1$
- $4(2x + 4)^2 = 32$
- $27 - 3(1 - x)^2 = 0$
- $-2(2x - 3)^2 + 18 = 0$
- $16(x - \frac{3}{4})^2 - 25 = 0$
- $\frac{1}{9}(2x + 1)^2 = 1$
- $\frac{1}{2}(x + 1)^2 = 32$
- $-64 - 49(4 - x)^2 = 0$
- $\frac{1}{4}(x - 7)^2 - 30 = -5$
- $17 - \frac{1}{3}(3x + 1)^2 = \frac{2}{3}$
- $x^2 - 3x - 18 = 0$
- $100x^2 + 1200x + 3200 = 0$
- $x^2 - 6x - 7 = 0$
- $x^2 = x$
- $36(4x - 3)^2 = 25$
- $9x^2 - 18x - 27 = 0$
- $16x^2 + 8x + 1 = 0$
- $x^2 - 81 = 0$
- $2x^2 - 4x + 5 = 0$
- $x^4 + 12x^3 + 35x^2 = 0$

Answers:

1. 2, -8
2. 2, -1
3.  $\frac{-3 \pm \sqrt{17}}{4}$
4.  $\frac{2}{3}$
5. No solution.
6.  $-1, \frac{1}{4}$
7. No solution.
8.  $-3 \pm \sqrt{3}$
9.  $\frac{1 \pm \sqrt{3}}{2}$
10. 10, -2
11.  $-3 \pm 2\sqrt{10}$
12. 1, 9
13. 1, 7
14. No solution.
15. 0, -12
16.  $\frac{3 \pm \sqrt{33}}{2}$
17. 12, -2
18. 7, -1
19. No solution.
20. 4, -2
21.  $\frac{9}{2}, -\frac{11}{2}$
22. No solution.
23.  $3, \frac{1}{3}$
24.  $-\frac{3}{4}, -\frac{9}{4}$
25.  $-\frac{4}{5}, -\frac{6}{5}$
26.  $-2 \pm \sqrt{2}$
27. -2, 4
28. 0, 3
29.  $2, -\frac{1}{2}$
30. -2, 1
31. 7, -9
32. No solution.
33. 17, -3
34.  $2, -\frac{8}{3}$
35. 6, -3
36. -8, -4
37. 7, -1
38. 0, 1
39.  $\frac{23}{24}, \frac{13}{24}$
40. 3, -1
41.  $-\frac{1}{4}$
42.  $\pm 9$
43. No solution.
44. 0, -5, -7