

# Solving Quadratic Equations (A)

Solve each equation for x

1.  $12x^2 + 48x + 23 = -22$

7.  $24x^2 - 14x = -2$

2.  $5x^2 + 21x + 15 = -3$

8.  $6x^2 - 23x + 1 = -19$

3.  $12x^2 + 13x + 1 = -2$

9.  $15x^2 + 51x + 9 = -9$

4.  $28x^2 - 66x + 27 = -9$

10.  $45x^2 - 69x + 6 = -12$

5.  $16x^2 + 10x - 1 = 5$

11.  $64x^2 - 32x - 2 = 19$

6.  $4x^2 - 17x + 2 = -2$

12.  $32x^2 + 52x + 5 = -10$

# Solving Quadratic Equations (A) Answers

Solve each equation for x

1.  $12x^2 + 48x + 23 = -22$   
 $12x^2 + 48x + 45 = 0$   
 $(2x + 5)(6x + 9) = 0$   
 $x = -2 \frac{1}{2}, -1 \frac{1}{2}$

2.  $5x^2 + 21x + 15 = -3$   
 $5x^2 + 21x + 18 = 0$   
 $(5x + 6)(x + 3) = 0$   
 $x = -1 \frac{1}{5}, -3$

3.  $12x^2 + 13x + 1 = -2$   
 $12x^2 + 13x + 3 = 0$   
 $(3x + 1)(4x + 3) = 0$   
 $x = -\frac{1}{3}, -\frac{3}{4}$

4.  $28x^2 - 66x + 27 = -9$   
 $28x^2 - 66x + 36 = 0$   
 $(7x - 6)(4x - 6) = 0$   
 $x = \frac{6}{7}, 1 \frac{1}{2}$

5.  $16x^2 + 10x - 1 = 5$   
 $16x^2 + 10x - 6 = 0$   
 $(8x - 3)(2x + 2) = 0$   
 $x = \frac{3}{8}, -1$

6.  $4x^2 - 17x + 2 = -2$   
 $4x^2 - 17x + 4 = 0$   
 $(x - 4)(4x - 1) = 0$   
 $x = 4, \frac{1}{4}$

7.  $24x^2 - 14x = -2$   
 $24x^2 - 14x + 2 = 0$   
 $(8x - 2)(3x - 1) = 0$   
 $x = \frac{1}{4}, \frac{1}{3}$

8.  $6x^2 - 23x + 1 = -19$   
 $6x^2 - 23x + 20 = 0$   
 $(2x - 5)(3x - 4) = 0$   
 $x = 2 \frac{1}{2}, 1 \frac{1}{3}$

9.  $15x^2 + 51x + 9 = -9$   
 $15x^2 + 51x + 18 = 0$   
 $(5x + 2)(3x + 9) = 0$   
 $x = -\frac{2}{5}, -3$

10.  $45x^2 - 69x + 6 = -12$   
 $45x^2 - 69x + 18 = 0$   
 $(9x - 3)(5x - 6) = 0$   
 $x = \frac{1}{3}, 1 \frac{1}{5}$

11.  $64x^2 - 32x - 2 = 19$   
 $64x^2 - 32x - 21 = 0$   
 $(8x + 3)(8x - 7) = 0$   
 $x = -\frac{3}{8}, \frac{7}{8}$

12.  $32x^2 + 52x + 5 = -10$   
 $32x^2 + 52x + 15 = 0$   
 $(4x + 5)(8x + 3) = 0$   
 $x = -1 \frac{1}{4}, -\frac{3}{8}$

## Solving Quadratic Equations (B)

Solve each equation for x

1.  $4x^2 + 32x - 35 = 1$

7.  $18x^2 + 36x - 1 = 53$

2.  $10x^2 - 31x + 2 = -13$

8.  $9x^2 - 18x + 5 = -4$

3.  $63x^2 + 83x + 2 = -22$

9.  $9x^2 - x - 3 = 5$

4.  $32x^2 + 48x - 15 = 17$

10.  $6x^2 - 37x + 49 = -7$

5.  $35x^2 - 46x - 7 = 9$

11.  $6x^2 - 8x - 7 = 1$

6.  $6x^2 + 43x = -7$

12.  $6x^2 + 36x + 13 = -17$

# Solving Quadratic Equations (B) Answers

Solve each equation for x

1.  $4x^2 + 32x - 35 = 1$   
 $4x^2 + 32x - 36 = 0$   
 $(4x - 4)(x + 9) = 0$   
 $x = 1, -9$

2.  $10x^2 - 31x + 2 = -13$   
 $10x^2 - 31x + 15 = 0$   
 $(5x - 3)(2x - 5) = 0$   
 $x = 3/5, 2\ 1/2$

3.  $63x^2 + 83x + 2 = -22$   
 $63x^2 + 83x + 24 = 0$   
 $(9x + 8)(7x + 3) = 0$   
 $x = -8/9, -3/7$

4.  $32x^2 + 48x - 15 = 17$   
 $32x^2 + 48x - 32 = 0$   
 $(4x + 8)(8x - 4) = 0$   
 $x = -2, 1/2$

5.  $35x^2 - 46x - 7 = 9$   
 $35x^2 - 46x - 16 = 0$   
 $(5x - 8)(7x + 2) = 0$   
 $x = 1\ 3/5, -2/7$

6.  $6x^2 + 43x = -7$   
 $6x^2 + 43x + 7 = 0$   
 $(x + 7)(6x + 1) = 0$   
 $x = -7, -1/6$

7.  $18x^2 + 36x - 1 = 53$   
 $18x^2 + 36x - 54 = 0$   
 $(9x - 9)(2x + 6) = 0$   
 $x = 1, -3$

8.  $9x^2 - 18x + 5 = -4$   
 $9x^2 - 18x + 9 = 0$   
 $(9x - 9)(x - 1) = 0$   
 $x = 1$

9.  $9x^2 - x - 3 = 5$   
 $9x^2 - x - 8 = 0$   
 $(9x + 8)(x - 1) = 0$   
 $x = -8/9, 1$

10.  $6x^2 - 37x + 49 = -7$   
 $6x^2 - 37x + 56 = 0$   
 $(3x - 8)(2x - 7) = 0$   
 $x = 2\ 2/3, 3\ 1/2$

11.  $6x^2 - 8x - 7 = 1$   
 $6x^2 - 8x - 8 = 0$   
 $(6x + 4)(x - 2) = 0$   
 $x = -2/3, 2$

12.  $6x^2 + 36x + 13 = -17$   
 $6x^2 + 36x + 30 = 0$   
 $(x + 5)(6x + 6) = 0$   
 $x = -5, -1$

## Solving Quadratic Equations (C)

Solve each equation for x

1.  $18x^2 + 6x - 10 = 14$

7.  $24x^2 + 15x - 6 = 3$

2.  $12x^2 + 25x - 3 = 4$

8.  $35x^2 + 44x - 6 = 1$

3.  $56x^2 - 93x + 11 = -16$

9.  $16x^2 + 4x - 12 = 8$

4.  $3x^2 + 17x - 11 = 17$

10.  $16x^2 - 56x + 14 = -10$

5.  $4x^2 + 32x + 63 = -1$

11.  $21x^2 + 71x + 5 = -35$

6.  $42x^2 + 66x + 15 = -9$

12.  $18x^2 + 15x + 1 = -2$

# Solving Quadratic Equations (C) Answers

Solve each equation for x

1.  $18x^2 + 6x - 10 = 14$   
 $18x^2 + 6x - 24 = 0$   
 $(3x + 4)(6x - 6) = 0$   
 $x = -1 \frac{1}{3}, 1$

2.  $12x^2 + 25x - 3 = 4$   
 $12x^2 + 25x - 7 = 0$   
 $(4x - 1)(3x + 7) = 0$   
 $x = \frac{1}{4}, -2 \frac{1}{3}$

3.  $56x^2 - 93x + 11 = -16$   
 $56x^2 - 93x + 27 = 0$   
 $(7x - 9)(8x - 3) = 0$   
 $x = 1 \frac{2}{7}, \frac{3}{8}$

4.  $3x^2 + 17x - 11 = 17$   
 $3x^2 + 17x - 28 = 0$   
 $(3x - 4)(x + 7) = 0$   
 $x = 1 \frac{1}{3}, -7$

5.  $4x^2 + 32x + 63 = -1$   
 $4x^2 + 32x + 64 = 0$   
 $(2x + 8)(2x + 8) = 0$   
 $x = -4$

6.  $42x^2 + 66x + 15 = -9$   
 $42x^2 + 66x + 24 = 0$   
 $(6x + 6)(7x + 4) = 0$   
 $x = -1, -\frac{4}{7}$

7.  $24x^2 + 15x - 6 = 3$   
 $24x^2 + 15x - 9 = 0$   
 $(8x - 3)(3x + 3) = 0$   
 $x = \frac{3}{8}, -1$

8.  $35x^2 + 44x - 6 = 1$   
 $35x^2 + 44x - 7 = 0$   
 $(7x - 1)(5x + 7) = 0$   
 $x = \frac{1}{7}, -1 \frac{2}{5}$

9.  $16x^2 + 4x - 12 = 8$   
 $16x^2 + 4x - 20 = 0$   
 $(4x + 5)(4x - 4) = 0$   
 $x = -1 \frac{1}{4}, 1$

10.  $16x^2 - 56x + 14 = -10$   
 $16x^2 - 56x + 24 = 0$   
 $(8x - 4)(2x - 6) = 0$   
 $x = \frac{1}{2}, 3$

11.  $21x^2 + 71x + 5 = -35$   
 $21x^2 + 71x + 40 = 0$   
 $(3x + 8)(7x + 5) = 0$   
 $x = -2 \frac{2}{3}, -\frac{5}{7}$

12.  $18x^2 + 15x + 1 = -2$   
 $18x^2 + 15x + 3 = 0$   
 $(3x + 1)(6x + 3) = 0$   
 $x = -\frac{1}{3}, -\frac{1}{2}$

## Solving Quadratic Equations (D)

Solve each equation for x

1.  $21x^2 - 66x + 1 = -8$

7.  $63x^2 - 33x - 15 = 3$

2.  $36x^2 + 84x + 35 = -13$

8.  $28x^2 - 91x + 21 = -42$

3.  $45x^2 + 8x - 2 = 2$

9.  $18x^2 - 18x - 20 = 16$

4.  $12x^2 - 22x + 6 = -2$

10.  $12x^2 + 50x + 21 = -7$

5.  $4x^2 + 15x - 10 = 15$

11.  $27x^2 + 57x - 59 = 13$

6.  $8x^2 - 43x + 7 = -8$

12.  $40x^2 + 17x - 4 = 1$

# Solving Quadratic Equations (D) Answers

Solve each equation for x

1.  $21x^2 - 66x + 1 = -8$   
 $21x^2 - 66x + 9 = 0$   
 $(3x - 9)(7x - 1) = 0$   
 $x = 3, 1/7$

2.  $36x^2 + 84x + 35 = -13$   
 $36x^2 + 84x + 48 = 0$   
 $(6x + 6)(6x + 8) = 0$   
 $x = -1, -1\ 1/3$

3.  $45x^2 + 8x - 2 = 2$   
 $45x^2 + 8x - 4 = 0$   
 $(9x - 2)(5x + 2) = 0$   
 $x = 2/9, -2/5$

4.  $12x^2 - 22x + 6 = -2$   
 $12x^2 - 22x + 8 = 0$   
 $(6x - 8)(2x - 1) = 0$   
 $x = 1\ 1/3, 1/2$

5.  $4x^2 + 15x - 10 = 15$   
 $4x^2 + 15x - 25 = 0$   
 $(4x - 5)(x + 5) = 0$   
 $x = 1\ 1/4, -5$

6.  $8x^2 - 43x + 7 = -8$   
 $8x^2 - 43x + 15 = 0$   
 $(x - 5)(8x - 3) = 0$   
 $x = 5, 3/8$

7.  $63x^2 - 33x - 15 = 3$   
 $63x^2 - 33x - 18 = 0$   
 $(9x + 3)(7x - 6) = 0$   
 $x = -1/3, 6/7$

8.  $28x^2 - 91x + 21 = -42$   
 $28x^2 - 91x + 63 = 0$   
 $(4x - 9)(7x - 7) = 0$   
 $x = 2\ 1/4, 1$

9.  $18x^2 - 18x - 20 = 16$   
 $18x^2 - 18x - 36 = 0$   
 $(2x - 4)(9x + 9) = 0$   
 $x = 2, -1$

10.  $12x^2 + 50x + 21 = -7$   
 $12x^2 + 50x + 28 = 0$   
 $(6x + 4)(2x + 7) = 0$   
 $x = -2/3, -3\ 1/2$

11.  $27x^2 + 57x - 59 = 13$   
 $27x^2 + 57x - 72 = 0$   
 $(3x + 9)(9x - 8) = 0$   
 $x = -3, 8/9$

12.  $40x^2 + 17x - 4 = 1$   
 $40x^2 + 17x - 5 = 0$   
 $(8x + 5)(5x - 1) = 0$   
 $x = -5/8, 1/5$



# Solving Quadratic Equations (E)

Solve each equation for x

1.  $21x^2 + 45x - 24 = 30$

7.  $81x^2 + 18x - 14 = 1$

2.  $36x^2 - 12x - 1 = 7$

8.  $63x^2 + 10x - 7 = 1$

3.  $20x^2 + 7x - 48 = 1$

9.  $9x^2 + 70x + 8 = -41$

4.  $56x^2 - 82x + 23 = -7$

10.  $2x^2 + 14x + 4 = -20$

5.  $63x^2 - 33x - 3 = 3$

11.  $4x^2 + 18x - 20 = 16$

6.  $28x^2 + 84x + 50 = -6$

12.  $x^2 - 3x - 10 = 30$

# Solving Quadratic Equations (E) Answers

Solve each equation for x

1.  $21x^2 + 45x - 24 = 30$   
 $21x^2 + 45x - 54 = 0$   
 $(7x - 6)(3x + 9) = 0$   
 $x = 6/7, -3$

2.  $36x^2 - 12x - 1 = 7$   
 $36x^2 - 12x - 8 = 0$   
 $(6x + 2)(6x - 4) = 0$   
 $x = -1/3, 2/3$

3.  $20x^2 + 7x - 48 = 1$   
 $20x^2 + 7x - 49 = 0$   
 $(4x + 7)(5x - 7) = 0$   
 $x = -1\frac{3}{4}, 1\frac{2}{5}$

4.  $56x^2 - 82x + 23 = -7$   
 $56x^2 - 82x + 30 = 0$   
 $(8x - 6)(7x - 5) = 0$   
 $x = 3/4, 5/7$

5.  $63x^2 - 33x - 3 = 3$   
 $63x^2 - 33x - 6 = 0$   
 $(7x + 1)(9x - 6) = 0$   
 $x = -1/7, 2/3$

6.  $28x^2 + 84x + 50 = -6$   
 $28x^2 + 84x + 56 = 0$   
 $(4x + 8)(7x + 7) = 0$   
 $x = -2, -1$

7.  $81x^2 + 18x - 14 = 1$   
 $81x^2 + 18x - 15 = 0$   
 $(9x + 5)(9x - 3) = 0$   
 $x = -5/9, 1/3$

8.  $63x^2 + 10x - 7 = 1$   
 $63x^2 + 10x - 8 = 0$   
 $(9x + 4)(7x - 2) = 0$   
 $x = -4/9, 2/7$

9.  $9x^2 + 70x + 8 = -41$   
 $9x^2 + 70x + 49 = 0$   
 $(x + 7)(9x + 7) = 0$   
 $x = -7, -7/9$

10.  $2x^2 + 14x + 4 = -20$   
 $2x^2 + 14x + 24 = 0$   
 $(2x + 8)(x + 3) = 0$   
 $x = -4, -3$

11.  $4x^2 + 18x - 20 = 16$   
 $4x^2 + 18x - 36 = 0$   
 $(x + 6)(4x - 6) = 0$   
 $x = -6, 1\frac{1}{2}$

12.  $x^2 - 3x - 10 = 30$   
 $x^2 - 3x - 40 = 0$   
 $(x - 8)(x + 5) = 0$   
 $x = 8, -5$

# Solving Quadratic Equations (F)

Solve each equation for x

1.  $10x^2 - 4x - 4 = 2$

7.  $56x^2 - 51x - 13 = 14$

2.  $18x^2 - 36x - 34 = 20$

8.  $32x^2 + 44x + 1 = -11$

3.  $56x^2 - 33x - 8 = 6$

9.  $49x^2 - 28x + 2 = -1$

4.  $30x^2 + 9x - 1 = 2$

10.  $10x^2 - 27x + 13 = -5$

5.  $20x^2 - 55x + 30 = -5$

11.  $56x^2 - 66x + 7 = -11$

6.  $9x^2 + 27x + 9 = -5$

12.  $16x^2 - 24x - 35 = 5$

# Solving Quadratic Equations (F) Answers

Solve each equation for x

1.  $10x^2 - 4x - 4 = 2$   
 $10x^2 - 4x - 6 = 0$   
 $(2x - 2)(5x + 3) = 0$   
 $x = 1, -3/5$

2.  $18x^2 - 36x - 34 = 20$   
 $18x^2 - 36x - 54 = 0$   
 $(6x + 6)(3x - 9) = 0$   
 $x = -1, 3$

3.  $56x^2 - 33x - 8 = 6$   
 $56x^2 - 33x - 14 = 0$   
 $(7x + 2)(8x - 7) = 0$   
 $x = -2/7, 7/8$

4.  $30x^2 + 9x - 1 = 2$   
 $30x^2 + 9x - 3 = 0$   
 $(5x - 1)(6x + 3) = 0$   
 $x = 1/5, -1/2$

5.  $20x^2 - 55x + 30 = -5$   
 $20x^2 - 55x + 35 = 0$   
 $(4x - 7)(5x - 5) = 0$   
 $x = 1\ 3/4, 1$

6.  $9x^2 + 27x + 9 = -5$   
 $9x^2 + 27x + 14 = 0$   
 $(3x + 7)(3x + 2) = 0$   
 $x = -2\ 1/3, -2/3$

7.  $56x^2 - 51x - 13 = 14$   
 $56x^2 - 51x - 27 = 0$   
 $(7x - 9)(8x + 3) = 0$   
 $x = 1\ 2/7, -3/8$

8.  $32x^2 + 44x + 1 = -11$   
 $32x^2 + 44x + 12 = 0$   
 $(4x + 4)(8x + 3) = 0$   
 $x = -1, -3/8$

9.  $49x^2 - 28x + 2 = -1$   
 $49x^2 - 28x + 3 = 0$   
 $(7x - 1)(7x - 3) = 0$   
 $x = 1/7, 3/7$

10.  $10x^2 - 27x + 13 = -5$   
 $10x^2 - 27x + 18 = 0$   
 $(2x - 3)(5x - 6) = 0$   
 $x = 1\ 1/2, 1\ 1/5$

11.  $56x^2 - 66x + 7 = -11$   
 $56x^2 - 66x + 18 = 0$   
 $(7x - 3)(8x - 6) = 0$   
 $x = 3/7, 3/4$

12.  $16x^2 - 24x - 35 = 5$   
 $16x^2 - 24x - 40 = 0$   
 $(8x + 8)(2x - 5) = 0$   
 $x = -1, 2\ 1/2$

# Solving Quadratic Equations (G)

Solve each equation for x

1.  $3x^2 + 18x + 3 = -24$

7.  $6x^2 - 2x - 30 = 18$

2.  $24x^2 - 18x - 5 = 1$

8.  $36x^2 - 10x - 2 = 2$

3.  $16x^2 - 32x - 6 = 3$

9.  $48x^2 - 48x + 5 = -7$

4.  $6x^2 + 63x + 52 = -29$

10.  $9x^2 + 15x - 25 = 11$

5.  $36x^2 + 34x - 21 = 9$

11.  $9x^2 + 42x + 31 = -17$

6.  $56x^2 - 50x = -6$

12.  $40x^2 + 21x - 8 = 41$

# Solving Quadratic Equations (G) Answers

Solve each equation for x

1.  $3x^2 + 18x + 3 = -24$   
 $3x^2 + 18x + 27 = 0$   
 $(3x + 9)(x + 3) = 0$   
 $x = -3$

2.  $24x^2 - 18x - 5 = 1$   
 $24x^2 - 18x - 6 = 0$   
 $(4x + 1)(6x - 6) = 0$   
 $x = -1/4, 1$

3.  $16x^2 - 32x - 6 = 3$   
 $16x^2 - 32x - 9 = 0$   
 $(4x - 9)(4x + 1) = 0$   
 $x = 2\frac{1}{4}, -1/4$

4.  $6x^2 + 63x + 52 = -29$   
 $6x^2 + 63x + 81 = 0$   
 $(x + 9)(6x + 9) = 0$   
 $x = -9, -1\frac{1}{2}$

5.  $36x^2 + 34x - 21 = 9$   
 $36x^2 + 34x - 30 = 0$   
 $(9x - 5)(4x + 6) = 0$   
 $x = 5/9, -1\frac{1}{2}$

6.  $56x^2 - 50x = -6$   
 $56x^2 - 50x + 6 = 0$   
 $(7x - 1)(8x - 6) = 0$   
 $x = 1/7, 3/4$

7.  $6x^2 - 2x - 30 = 18$   
 $6x^2 - 2x - 48 = 0$   
 $(3x + 8)(2x - 6) = 0$   
 $x = -2\frac{2}{3}, 3$

8.  $36x^2 - 10x - 2 = 2$   
 $36x^2 - 10x - 4 = 0$   
 $(4x - 2)(9x + 2) = 0$   
 $x = 1/2, -2/9$

9.  $48x^2 - 48x + 5 = -7$   
 $48x^2 - 48x + 12 = 0$   
 $(6x - 3)(8x - 4) = 0$   
 $x = 1/2$

10.  $9x^2 + 15x - 25 = 11$   
 $9x^2 + 15x - 36 = 0$   
 $(3x - 4)(3x + 9) = 0$   
 $x = 1\frac{1}{3}, -3$

11.  $9x^2 + 42x + 31 = -17$   
 $9x^2 + 42x + 48 = 0$   
 $(3x + 8)(3x + 6) = 0$   
 $x = -2\frac{2}{3}, -2$

12.  $40x^2 + 21x - 8 = 41$   
 $40x^2 + 21x - 49 = 0$   
 $(5x + 7)(8x - 7) = 0$   
 $x = -1\frac{2}{5}, 7/8$

# Solving Quadratic Equations (H)

Solve each equation for x

1.  $42x^2 + 13x = -1$

7.  $6x^2 + 17x - 11 = 3$

2.  $24x^2 - 52x + 1 = -27$

8.  $49x^2 - 1 = 0$

3.  $21x^2 + 34x - 10 = 25$

9.  $8x^2 - 18x - 28 = 7$

4.  $32x^2 - 24x - 43 = 13$

10.  $4x^2 - 38x + 33 = -15$

5.  $40x^2 + 53x + 7 = -2$

11.  $14x^2 - 37x + 5 = 0$

6.  $20x^2 + 36x - 7 = 1$

12.  $5x^2 - 33x + 5 = -13$

# Solving Quadratic Equations (H) Answers

Solve each equation for x

1.  $42x^2 + 13x = -1$   
 $42x^2 + 13x + 1 = 0$   
 $(7x + 1)(6x + 1) = 0$   
 $x = -1/7, -1/6$

2.  $24x^2 - 52x + 1 = -27$   
 $24x^2 - 52x + 28 = 0$   
 $(4x - 4)(6x - 7) = 0$   
 $x = 1, 1\frac{1}{6}$

3.  $21x^2 + 34x - 10 = 25$   
 $21x^2 + 34x - 35 = 0$   
 $(7x - 5)(3x + 7) = 0$   
 $x = 5/7, -2\frac{1}{3}$

4.  $32x^2 - 24x - 43 = 13$   
 $32x^2 - 24x - 56 = 0$   
 $(8x + 8)(4x - 7) = 0$   
 $x = -1, 1\frac{3}{4}$

5.  $40x^2 + 53x + 7 = -2$   
 $40x^2 + 53x + 9 = 0$   
 $(8x + 9)(5x + 1) = 0$   
 $x = -1\frac{1}{8}, -1/5$

6.  $20x^2 + 36x - 7 = 1$   
 $20x^2 + 36x - 8 = 0$   
 $(4x + 8)(5x - 1) = 0$   
 $x = -2, 1/5$

7.  $6x^2 + 17x - 11 = 3$   
 $6x^2 + 17x - 14 = 0$   
 $(2x + 7)(3x - 2) = 0$   
 $x = -3\frac{1}{2}, 2/3$

8.  $49x^2 - 1 = 0$   
 $49x^2 - 1 = 0$   
 $(7x + 1)(7x - 1) = 0$   
 $x = -1/7, 1/7$

9.  $8x^2 - 18x - 28 = 7$   
 $8x^2 - 18x - 35 = 0$   
 $(2x - 7)(4x + 5) = 0$   
 $x = 3\frac{1}{2}, -1\frac{1}{4}$

10.  $4x^2 - 38x + 33 = -15$   
 $4x^2 - 38x + 48 = 0$   
 $(4x - 6)(x - 8) = 0$   
 $x = 1\frac{1}{2}, 8$

11.  $14x^2 - 37x + 5 = 0$   
 $14x^2 - 37x + 5 = 0$   
 $(2x - 5)(7x - 1) = 0$   
 $x = 2\frac{1}{2}, 1/7$

12.  $5x^2 - 33x + 5 = -13$   
 $5x^2 - 33x + 18 = 0$   
 $(5x - 3)(x - 6) = 0$   
 $x = 3/5, 6$



# Solving Quadratic Equations (I)

Solve each equation for x

1.  $42x^2 - 22x - 1 = 3$

7.  $30x^2 - 61x + 11 = -19$

2.  $7x^2 + 64x + 4 = -60$

8.  $16x^2 + 40x + 3 = -21$

3.  $5x^2 + 8x - 7 = 14$

9.  $10x^2 - 25x + 14 = -1$

4.  $8x^2 + 26x = -6$

10.  $49x^2 - 14x - 13 = 35$

5.  $63x^2 + 10x - 21 = 4$

11.  $8x^2 - 12x - 1 = 7$

6.  $40x^2 + 86x + 34 = -8$

12.  $24x^2 + 59x + 2 = -5$

# Solving Quadratic Equations (I) Answers

Solve each equation for x

1.  $42x^2 - 22x - 1 = 3$   
 $42x^2 - 22x - 4 = 0$   
 $(7x + 1)(6x - 4) = 0$   
 $x = -1/7, 2/3$

2.  $7x^2 + 64x + 4 = -60$   
 $7x^2 + 64x + 64 = 0$   
 $(7x + 8)(x + 8) = 0$   
 $x = -1\ 1/7, -8$

3.  $5x^2 + 8x - 7 = 14$   
 $5x^2 + 8x - 21 = 0$   
 $(x + 3)(5x - 7) = 0$   
 $x = -3, 1\ 2/5$

4.  $8x^2 + 26x = -6$   
 $8x^2 + 26x + 6 = 0$   
 $(x + 3)(8x + 2) = 0$   
 $x = -3, -1/4$

5.  $63x^2 + 10x - 21 = 4$   
 $63x^2 + 10x - 25 = 0$   
 $(7x + 5)(9x - 5) = 0$   
 $x = -5/7, 5/9$

6.  $40x^2 + 86x + 34 = -8$   
 $40x^2 + 86x + 42 = 0$   
 $(8x + 6)(5x + 7) = 0$   
 $x = -3/4, -1\ 2/5$

7.  $30x^2 - 61x + 11 = -19$   
 $30x^2 - 61x + 30 = 0$   
 $(5x - 6)(6x - 5) = 0$   
 $x = 1\ 1/5, 5/6$

8.  $16x^2 + 40x + 3 = -21$   
 $16x^2 + 40x + 24 = 0$   
 $(2x + 3)(8x + 8) = 0$   
 $x = -1\ 1/2, -1$

9.  $10x^2 - 25x + 14 = -1$   
 $10x^2 - 25x + 15 = 0$   
 $(5x - 5)(2x - 3) = 0$   
 $x = 1, 1\ 1/2$

10.  $49x^2 - 14x - 13 = 35$   
 $49x^2 - 14x - 48 = 0$   
 $(7x + 6)(7x - 8) = 0$   
 $x = -6/7, 1\ 1/7$

11.  $8x^2 - 12x - 1 = 7$   
 $8x^2 - 12x - 8 = 0$   
 $(2x + 1)(4x - 8) = 0$   
 $x = -1/2, 2$

12.  $24x^2 + 59x + 2 = -5$   
 $24x^2 + 59x + 7 = 0$   
 $(8x + 1)(3x + 7) = 0$   
 $x = -1/8, -2\ 1/3$

# Solving Quadratic Equations (J)

Solve each equation for x

1.  $24x^2 + 10x - 7 = 14$

7.  $7x^2 + 44x + 8 = -37$

2.  $5x^2 - 46x + 5 = -4$

8.  $36x^2 + 35x - 2 = 47$

3.  $16x^2 - 16x + 1 = -2$

9.  $20x^2 - 39x = -7$

4.  $6x^2 - 27x + 15 = -12$

10.  $20x^2 - 62x + 47 = -1$

5.  $28x^2 + 69x + 25 = -10$

11.  $16x^2 + 6x - 4 = 6$

6.  $30x^2 + 19x - 4 = 1$

12.  $7x^2 + 22x + 7 = -9$

# Solving Quadratic Equations (J) Answers

Solve each equation for x

1.  $24x^2 + 10x - 7 = 14$   
 $24x^2 + 10x - 21 = 0$   
 $(4x - 3)(6x + 7) = 0$   
 $x = 3/4, -1 \frac{1}{6}$

2.  $5x^2 - 46x + 5 = -4$   
 $5x^2 - 46x + 9 = 0$   
 $(x - 9)(5x - 1) = 0$   
 $x = 9, 1/5$

3.  $16x^2 - 16x + 1 = -2$   
 $16x^2 - 16x + 3 = 0$   
 $(4x - 3)(4x - 1) = 0$   
 $x = 3/4, 1/4$

4.  $6x^2 - 27x + 15 = -12$   
 $6x^2 - 27x + 27 = 0$   
 $(x - 3)(6x - 9) = 0$   
 $x = 3, 1 \frac{1}{2}$

5.  $28x^2 + 69x + 25 = -10$   
 $28x^2 + 69x + 35 = 0$   
 $(7x + 5)(4x + 7) = 0$   
 $x = -5/7, -1 \frac{3}{4}$

6.  $30x^2 + 19x - 4 = 1$   
 $30x^2 + 19x - 5 = 0$   
 $(6x + 5)(5x - 1) = 0$   
 $x = -5/6, 1/5$

7.  $7x^2 + 44x + 8 = -37$   
 $7x^2 + 44x + 45 = 0$   
 $(7x + 9)(x + 5) = 0$   
 $x = -1 \frac{2}{7}, -5$

8.  $36x^2 + 35x - 2 = 47$   
 $36x^2 + 35x - 49 = 0$   
 $(4x + 7)(9x - 7) = 0$   
 $x = -1 \frac{3}{4}, 7/9$

9.  $20x^2 - 39x = -7$   
 $20x^2 - 39x + 7 = 0$   
 $(5x - 1)(4x - 7) = 0$   
 $x = 1/5, 1 \frac{3}{4}$

10.  $20x^2 - 62x + 47 = -1$   
 $20x^2 - 62x + 48 = 0$   
 $(5x - 8)(4x - 6) = 0$   
 $x = 1 \frac{3}{5}, 1 \frac{1}{2}$

11.  $16x^2 + 6x - 4 = 6$   
 $16x^2 + 6x - 10 = 0$   
 $(8x - 5)(2x + 2) = 0$   
 $x = 5/8, -1$

12.  $7x^2 + 22x + 7 = -9$   
 $7x^2 + 22x + 16 = 0$   
 $(7x + 8)(x + 2) = 0$   
 $x = -1 \frac{1}{7}, -2$