

Solving Quadratic Equations (A)

Solve each equation for x

1. $2x^2 + 13x - 6 = 1$

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

2. $x^2 + 2x - 39 = 9$

8. $4x^2 + 6x - 20 = 8$

3. $2x^2 - 15x + 3 = -4$

9. $4x^2 + 2x - 6 = 24$

4. $2x^2 + 21x + 23 = -26$

10. $2x^2 + 3x - 21 = 6$

5. $x^2 - 16x + 42 = -22$

11. $x^2 - 6x + 5 = -3$

6. $2x^2 - 4x - 5 = 1$

12. $2x^2 - 9x - 17 = 64$

Solving Quadratic Equations (A) Answers

Solve each equation for x

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

7. $x^2 + 9x + 12 = -2$
 $x^2 + 9x + 14 = 0$
 $(x + 7)(x + 2) = 0$
 $x = -7, -2$

2. $x^2 + 2x - 39 = 9$
 $x^2 + 2x - 48 = 0$
 $(x + 8)(x - 6) = 0$
 $x = -8, 6$

8. $4x^2 + 6x - 20 = 8$
 $4x^2 + 6x - 28 = 0$
 $(2x + 7)(2x - 4) = 0$
 $x = -3 \frac{1}{2}, 2$

3. $2x^2 - 15x + 3 = -4$
 $2x^2 - 15x + 7 = 0$
 $(2x - 1)(x - 7) = 0$
 $x = 1/2, 7$

9. $4x^2 + 2x - 6 = 24$
 $4x^2 + 2x - 30 = 0$
 $(2x + 6)(2x - 5) = 0$
 $x = -3, 2 \frac{1}{2}$

4. $2x^2 + 21x + 23 = -26$
 $2x^2 + 21x + 49 = 0$
 $(x + 7)(2x + 7) = 0$
 $x = -7, -3 \frac{1}{2}$

10. $2x^2 + 3x - 21 = 6$
 $2x^2 + 3x - 27 = 0$
 $(x - 3)(2x + 9) = 0$
 $x = 3, -4 \frac{1}{2}$

5. $x^2 - 16x + 42 = -22$
 $x^2 - 16x + 64 = 0$
 $(x - 8)(x - 8) = 0$
 $x = 8$

11. $x^2 - 6x + 5 = -3$
 $x^2 - 6x + 8 = 0$
 $(x - 2)(x - 4) = 0$
 $x = 2, 4$

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

12. $2x^2 - 9x - 17 = 64$
 $2x^2 - 9x - 81 = 0$
 $(2x + 9)(x - 9) = 0$
 $x = -4 \frac{1}{2}, 9$

Solving Quadratic Equations (B)

Solve each equation for x

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

7. $4x^2 - 8x - 3 = 18$

2. $x^2 - x - 2 = 70$

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

3. $2x^2 + 10x - 10 = 2$

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

4. $4x^2 + 14x + 2 = -8$

10. $4x^2 - 22x + 5 = -19$

5. $x^2 - 9x = -8$

11. $4x^2 - 2x - 32 = 10$

6. $2x^2 - 4x - 5 = 11$

12. $4x^2 + 4x + 1 = 0$

Solving Quadratic Equations (B) Answers

Solve each equation for x

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

2. $x^2 - x - 2 = 70$
 $x^2 - x - 72 = 0$
 $(x - 9)(x + 8) = 0$
 $x = 9, -8$

3. $2x^2 + 10x - 10 = 2$
 $2x^2 + 10x - 12 = 0$
 $(2x - 2)(x + 6) = 0$
 $x = 1, -6$

4. $4x^2 + 14x + 2 = -8$
 $4x^2 + 14x + 10 = 0$
 $(2x + 2)(2x + 5) = 0$
 $x = -1, -2 \frac{1}{2}$

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

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

7. $4x^2 - 8x - 3 = 18$
 $4x^2 - 8x - 21 = 0$
 $(2x - 7)(2x + 3) = 0$
 $x = 3 \frac{1}{2}, -1 \frac{1}{2}$

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

9. $2x^2 + x - 1 = 2$
 $2x^2 + x - 3 = 0$
 $(2x + 3)(x - 1) = 0$
 $x = -1 \frac{1}{2}, 1$

10. $4x^2 - 22x + 5 = -19$
 $4x^2 - 22x + 24 = 0$
 $(2x - 3)(2x - 8) = 0$
 $x = 1 \frac{1}{2}, 4$

11. $4x^2 - 2x - 32 = 10$
 $4x^2 - 2x - 42 = 0$
 $(2x - 7)(2x + 6) = 0$
 $x = 3 \frac{1}{2}, -3$

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

Solving Quadratic Equations (C)

Solve each equation for x

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

7. $x^2 + 2x - 7 = 41$

2. $2x^2 - 7x - 3 = 27$

8. $2x^2 - 19x + 5 = -4$

3. $2x^2 - 7x + 1 = -5$

9. $2x^2 - 18x + 9 = -7$

4. $2x^2 + 7x + 2 = -1$

10. $2x^2 + 7x + 2 = -3$

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

11. $2x^2 - 4x - 2 = 28$

6. $4x^2 + 4x - 3 = 5$

12. $4x^2 - 28x + 22 = -26$

Solving Quadratic Equations (C) Answers

Solve each equation for x

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

2. $2x^2 - 7x - 3 = 27$
 $2x^2 - 7x - 30 = 0$
 $(x - 6)(2x + 5) = 0$
 $x = 6, -2 \frac{1}{2}$

3. $2x^2 - 7x + 1 = -5$
 $2x^2 - 7x + 6 = 0$
 $(x - 2)(2x - 3) = 0$
 $x = 2, 1 \frac{1}{2}$

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

5. $x^2 + 2x - 37 = 11$
 $x^2 + 2x - 48 = 0$
 $(x - 6)(x + 8) = 0$
 $x = 6, -8$

6. $4x^2 + 4x - 3 = 5$
 $4x^2 + 4x - 8 = 0$
 $(2x + 4)(2x - 2) = 0$
 $x = -2, 1$

7. $x^2 + 2x - 7 = 41$
 $x^2 + 2x - 48 = 0$
 $(x - 6)(x + 8) = 0$
 $x = 6, -8$

8. $2x^2 - 19x + 5 = -4$
 $2x^2 - 19x + 9 = 0$
 $(x - 9)(2x - 1) = 0$
 $x = 9, \frac{1}{2}$

9. $2x^2 - 18x + 9 = -7$
 $2x^2 - 18x + 16 = 0$
 $(x - 8)(2x - 2) = 0$
 $x = 8, 1$

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

11. $2x^2 - 4x - 2 = 28$
 $2x^2 - 4x - 30 = 0$
 $(x - 5)(2x + 6) = 0$
 $x = 5, -3$

12. $4x^2 - 28x + 22 = -26$
 $4x^2 - 28x + 48 = 0$
 $(2x - 6)(2x - 8) = 0$
 $x = 3, 4$

Solving Quadratic Equations (D)

Solve each equation for x

1. $2x^2 - 7x - 1 = 14$

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

2. $2x^2 - 5x - 8 = 17$

8. $x^2 + 2x - 7 = 41$

3. $x^2 + 2x - 20 = 4$

9. $x^2 - 65 = 16$

4. $x^2 - 15x + 2 = -54$

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

5. $4x^2 - 4x - 9 = 15$

11. $2x^2 + 4x - 11 = 5$

6. $2x^2 + 5x - 41 = 22$

12. $4x^2 + 2x - 13 = 17$

Solving Quadratic Equations (D) Answers

Solve each equation for x

1. $2x^2 - 7x - 1 = 14$
 $2x^2 - 7x - 15 = 0$
 $(2x + 3)(x - 5) = 0$
 $x = -1 \frac{1}{2}, 5$

2. $2x^2 - 5x - 8 = 17$
 $2x^2 - 5x - 25 = 0$
 $(2x + 5)(x - 5) = 0$
 $x = -2 \frac{1}{2}, 5$

3. $x^2 + 2x - 20 = 4$
 $x^2 + 2x - 24 = 0$
 $(x + 6)(x - 4) = 0$
 $x = -6, 4$

4. $x^2 - 15x + 2 = -54$
 $x^2 - 15x + 56 = 0$
 $(x - 7)(x - 8) = 0$
 $x = 7, 8$

5. $4x^2 - 4x - 9 = 15$
 $4x^2 - 4x - 24 = 0$
 $(2x + 4)(2x - 6) = 0$
 $x = -2, 3$

6. $2x^2 + 5x - 41 = 22$
 $2x^2 + 5x - 63 = 0$
 $(x + 7)(2x - 9) = 0$
 $x = -7, 4 \frac{1}{2}$

7. $2x^2 - 14x + 14 = -10$
 $2x^2 - 14x + 24 = 0$
 $(x - 4)(2x - 6) = 0$
 $x = 4, 3$

8. $x^2 + 2x - 7 = 41$
 $x^2 + 2x - 48 = 0$
 $(x + 8)(x - 6) = 0$
 $x = -8, 6$

9. $x^2 - 65 = 16$
 $x^2 - 81 = 0$
 $(x + 9)(x - 9) = 0$
 $x = -9, 9$

10. $2x^2 - 15x + 5 = -2$
 $2x^2 - 15x + 7 = 0$
 $(2x - 1)(x - 7) = 0$
 $x = \frac{1}{2}, 7$

11. $2x^2 + 4x - 11 = 5$
 $2x^2 + 4x - 16 = 0$
 $(x + 4)(2x - 4) = 0$
 $x = -4, 2$

12. $4x^2 + 2x - 13 = 17$
 $4x^2 + 2x - 30 = 0$
 $(2x + 6)(2x - 5) = 0$
 $x = -3, 2 \frac{1}{2}$

Solving Quadratic Equations (E)

Solve each equation for x

1. $2x^2 - 2x - 7 = 5$

7. $2x^2 - 3x + 1 = 0$

2. $4x^2 + 22x = -18$

8. $2x^2 - x - 1 = 5$

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

9. $2x^2 - 8x + 8 = 0$

4. $4x^2 + 2x - 64 = 8$

10. $2x^2 - x - 1 = 0$

5. $x^2 + 3x - 15 = 39$

11. $x^2 + 15x + 56 = 0$

6. $4x^2 - 30x + 37 = -17$

12. $4x^2 + 22x + 13 = -5$

Solving Quadratic Equations (E) Answers

Solve each equation for x

1. $2x^2 - 2x - 7 = 5$
 $2x^2 - 2x - 12 = 0$
 $(x - 3)(2x + 4) = 0$
 $x = 3, -2$

2. $4x^2 + 22x = -18$
 $4x^2 + 22x + 18 = 0$
 $(2x + 2)(2x + 9) = 0$
 $x = -1, -4\frac{1}{2}$

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

4. $4x^2 + 2x - 64 = 8$
 $4x^2 + 2x - 72 = 0$
 $(2x - 8)(2x + 9) = 0$
 $x = 4, -4\frac{1}{2}$

5. $x^2 + 3x - 15 = 39$
 $x^2 + 3x - 54 = 0$
 $(x + 9)(x - 6) = 0$
 $x = -9, 6$

6. $4x^2 - 30x + 37 = -17$
 $4x^2 - 30x + 54 = 0$
 $(2x - 9)(2x - 6) = 0$
 $x = 4\frac{1}{2}, 3$

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

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

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

10. $2x^2 - x - 1 = 0$
 $2x^2 - x - 1 = 0$
 $(x - 1)(2x + 1) = 0$
 $x = 1, -\frac{1}{2}$

11. $x^2 + 15x + 56 = 0$
 $x^2 + 15x + 56 = 0$
 $(x + 8)(x + 7) = 0$
 $x = -8, -7$

12. $4x^2 + 22x + 13 = -5$
 $4x^2 + 22x + 18 = 0$
 $(2x + 2)(2x + 9) = 0$
 $x = -1, -4\frac{1}{2}$

Solving Quadratic Equations (F)

Solve each equation for x

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

7. $4x^2 - 2x - 8 = 4$

2. $2x^2 - 5x + 3 = 0$

8. $2x^2 + 8x + 8 = 0$

3. $x^2 - 6x - 2 = 14$

9. $2x^2 - 20x + 12 = -6$

4. $4x^2 + 24x + 22 = -5$

10. $2x^2 - 18x + 12 = -24$

5. $4x^2 + 36x + 29 = -52$

11. $x^2 - 9x + 6 = -8$

6. $4x^2 - 4x - 7 = 1$

12. $x^2 - 2 = 2$

Solving Quadratic Equations (F) Answers

Solve each equation for x

1. $x^2 - x - 3 = 3$
 $x^2 - x - 6 = 0$
 $(x - 3)(x + 2) = 0$
 $x = 3, -2$

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

3. $x^2 - 6x - 2 = 14$
 $x^2 - 6x - 16 = 0$
 $(x + 2)(x - 8) = 0$
 $x = -2, 8$

4. $4x^2 + 24x + 22 = -5$
 $4x^2 + 24x + 27 = 0$
 $(2x + 9)(2x + 3) = 0$
 $x = -4\frac{1}{2}, -1\frac{1}{2}$

5. $4x^2 + 36x + 29 = -52$
 $4x^2 + 36x + 81 = 0$
 $(2x + 9)(2x + 9) = 0$
 $x = -4\frac{1}{2}$

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

7. $4x^2 - 2x - 8 = 4$
 $4x^2 - 2x - 12 = 0$
 $(2x + 3)(2x - 4) = 0$
 $x = -1\frac{1}{2}, 2$

8. $2x^2 + 8x + 8 = 0$
 $2x^2 + 8x + 8 = 0$
 $(2x + 4)(x + 2) = 0$
 $x = -2$

9. $2x^2 - 20x + 12 = -6$
 $2x^2 - 20x + 18 = 0$
 $(2x - 2)(x - 9) = 0$
 $x = 1, 9$

10. $2x^2 - 18x + 12 = -24$
 $2x^2 - 18x + 36 = 0$
 $(2x - 6)(x - 6) = 0$
 $x = 3, 6$

11. $x^2 - 9x + 6 = -8$
 $x^2 - 9x + 14 = 0$
 $(x - 2)(x - 7) = 0$
 $x = 2, 7$

12. $x^2 - 2 = 2$
 $x^2 - 4 = 0$
 $(x - 2)(x + 2) = 0$
 $x = 2, -2$

Solving Quadratic Equations (G)

Solve each equation for x

1. $x^2 - x - 37 = 5$

7. $2x^2 - 3x - 21 = 14$

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

8. $4x^2 - 16x + 1 = -6$

3. $4x^2 - 6x - 11 = 43$

9. $x^2 - 6x - 26 = 1$

4. $4x^2 + 14x + 1 = -5$

10. $2x^2 + 10x + 4 = -8$

5. $x^2 - x - 8 = 12$

11. $x^2 - 5x - 11 = 3$

6. $2x^2 - 18x + 6 = -22$

12. $2x^2 + 10x - 36 = 12$

Solving Quadratic Equations (G) Answers

Solve each equation for x

1. $x^2 - x - 37 = 5$
 $x^2 - x - 42 = 0$
 $(x - 7)(x + 6) = 0$
 $x = 7, -6$

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

3. $4x^2 - 6x - 11 = 43$
 $4x^2 - 6x - 54 = 0$
 $(2x + 6)(2x - 9) = 0$
 $x = -3, 4 \frac{1}{2}$

4. $4x^2 + 14x + 1 = -5$
 $4x^2 + 14x + 6 = 0$
 $(2x + 1)(2x + 6) = 0$
 $x = -\frac{1}{2}, -3$

5. $x^2 - x - 8 = 12$
 $x^2 - x - 20 = 0$
 $(x + 4)(x - 5) = 0$
 $x = -4, 5$

6. $2x^2 - 18x + 6 = -22$
 $2x^2 - 18x + 28 = 0$
 $(2x - 4)(x - 7) = 0$
 $x = 2, 7$

7. $2x^2 - 3x - 21 = 14$
 $2x^2 - 3x - 35 = 0$
 $(2x + 7)(x - 5) = 0$
 $x = -3 \frac{1}{2}, 5$

8. $4x^2 - 16x + 1 = -6$
 $4x^2 - 16x + 7 = 0$
 $(2x - 1)(2x - 7) = 0$
 $x = \frac{1}{2}, 3 \frac{1}{2}$

9. $x^2 - 6x - 26 = 1$
 $x^2 - 6x - 27 = 0$
 $(x - 9)(x + 3) = 0$
 $x = 9, -3$

10. $2x^2 + 10x + 4 = -8$
 $2x^2 + 10x + 12 = 0$
 $(x + 2)(2x + 6) = 0$
 $x = -2, -3$

11. $x^2 - 5x - 11 = 3$
 $x^2 - 5x - 14 = 0$
 $(x + 2)(x - 7) = 0$
 $x = -2, 7$

12. $2x^2 + 10x - 36 = 12$
 $2x^2 + 10x - 48 = 0$
 $(2x - 6)(x + 8) = 0$
 $x = 3, -8$

Solving Quadratic Equations (H)

Solve each equation for x

1. $x^2 - 5x - 10 = 14$

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

2. $4x^2 - 30x + 18 = -36$

8. $x^2 - 6x - 14 = 13$

3. $2x^2 + 8x + 2 = -4$

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

4. $4x^2 + 16x = -7$

10. $x^2 - 10x + 15 = -6$

5. $x^2 - 16x + 44 = -19$

11. $4x^2 - 31 = 5$

6. $2x^2 + 18x + 3 = -13$

12. $2x^2 + 9x - 17 = 1$

Solving Quadratic Equations (H) Answers

Solve each equation for x

1. $x^2 - 5x - 10 = 14$
 $x^2 - 5x - 24 = 0$
 $(x + 3)(x - 8) = 0$
 $x = -3, 8$

7. $x^2 + 6x - 6 = 10$
 $x^2 + 6x - 16 = 0$
 $(x + 8)(x - 2) = 0$
 $x = -8, 2$

2. $4x^2 - 30x + 18 = -36$
 $4x^2 - 30x + 54 = 0$
 $(2x - 6)(2x - 9) = 0$
 $x = 3, 4\frac{1}{2}$

8. $x^2 - 6x - 14 = 13$
 $x^2 - 6x - 27 = 0$
 $(x - 9)(x + 3) = 0$
 $x = 9, -3$

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

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

4. $4x^2 + 16x = -7$
 $4x^2 + 16x + 7 = 0$
 $(2x + 7)(2x + 1) = 0$
 $x = -3\frac{1}{2}, -\frac{1}{2}$

10. $x^2 - 10x + 15 = -6$
 $x^2 - 10x + 21 = 0$
 $(x - 3)(x - 7) = 0$
 $x = 3, 7$

5. $x^2 - 16x + 44 = -19$
 $x^2 - 16x + 63 = 0$
 $(x - 9)(x - 7) = 0$
 $x = 9, 7$

11. $4x^2 - 31 = 5$
 $4x^2 - 36 = 0$
 $(2x - 6)(2x + 6) = 0$
 $x = 3, -3$

6. $2x^2 + 18x + 3 = -13$
 $2x^2 + 18x + 16 = 0$
 $(2x + 2)(x + 8) = 0$
 $x = -1, -8$

12. $2x^2 + 9x - 17 = 1$
 $2x^2 + 9x - 18 = 0$
 $(x + 6)(2x - 3) = 0$
 $x = -6, 1\frac{1}{2}$

Solving Quadratic Equations (I)

Solve each equation for x

1. $x^2 - 7x - 3 = 15$

7. $2x^2 + 16x + 12 = -2$

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

8. $4x^2 + 20x + 4 = -20$

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

9. $2x^2 + 9x + 10 = 0$

4. $x^2 + 3x - 12 = 16$

10. $2x^2 + 17x + 15 = -15$

5. $x^2 - 6x + 5 = -4$

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

6. $4x^2 - 14x - 6 = 2$

12. $x^2 - 5 = 4$

Solving Quadratic Equations (I) Answers

Solve each equation for x

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

2. $2x^2 + 3x - 1 = 13$
 $2x^2 + 3x - 14 = 0$
 $(2x + 7)(x - 2) = 0$
 $x = -3 \frac{1}{2}, 2$

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

4. $x^2 + 3x - 12 = 16$
 $x^2 + 3x - 28 = 0$
 $(x - 4)(x + 7) = 0$
 $x = 4, -7$

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

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

7. $2x^2 + 16x + 12 = -2$
 $2x^2 + 16x + 14 = 0$
 $(x + 7)(2x + 2) = 0$
 $x = -7, -1$

8. $4x^2 + 20x + 4 = -20$
 $4x^2 + 20x + 24 = 0$
 $(2x + 4)(2x + 6) = 0$
 $x = -2, -3$

9. $2x^2 + 9x + 10 = 0$
 $2x^2 + 9x + 10 = 0$
 $(2x + 5)(x + 2) = 0$
 $x = -2 \frac{1}{2}, -2$

10. $2x^2 + 17x + 15 = -15$
 $2x^2 + 17x + 30 = 0$
 $(x + 6)(2x + 5) = 0$
 $x = -6, -2 \frac{1}{2}$

11. $2x^2 - 16x + 3 = -11$
 $2x^2 - 16x + 14 = 0$
 $(2x - 2)(x - 7) = 0$
 $x = 1, 7$

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

Solving Quadratic Equations (J)

Solve each equation for x

1. $2x^2 - 23 = 9$

7. $2x^2 + 9x - 50 = 31$

2. $2x^2 - 17x + 27 = -9$

8. $x^2 + 4x - 2 = 3$

3. $2x^2 - 8x + 2 = -4$

9. $2x^2 - 6x - 19 = 1$

4. $2x^2 - 6x + 1 = -3$

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

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

11. $2x^2 - 7x - 68 = 4$

6. $2x^2 - 7x - 34 = 38$

12. $2x^2 + 19x + 30 = -12$

Solving Quadratic Equations (J) Answers

Solve each equation for x

1. $2x^2 - 23 = 9$
 $2x^2 - 32 = 0$
 $(2x - 8)(x + 4) = 0$
 $x = 4, -4$

2. $2x^2 - 17x + 27 = -9$
 $2x^2 - 17x + 36 = 0$
 $(x - 4)(2x - 9) = 0$
 $x = 4, 4\frac{1}{2}$

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

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

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

6. $2x^2 - 7x - 34 = 38$
 $2x^2 - 7x - 72 = 0$
 $(2x + 9)(x - 8) = 0$
 $x = -4\frac{1}{2}, 8$

7. $2x^2 + 9x - 50 = 31$
 $2x^2 + 9x - 81 = 0$
 $(2x - 9)(x + 9) = 0$
 $x = 4\frac{1}{2}, -9$

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

9. $2x^2 - 6x - 19 = 1$
 $2x^2 - 6x - 20 = 0$
 $(x - 5)(2x + 4) = 0$
 $x = 5, -2$

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

11. $2x^2 - 7x - 68 = 4$
 $2x^2 - 7x - 72 = 0$
 $(x - 8)(2x + 9) = 0$
 $x = 8, -4\frac{1}{2}$

12. $2x^2 + 19x + 30 = -12$
 $2x^2 + 19x + 42 = 0$
 $(2x + 7)(x + 6) = 0$
 $x = -3\frac{1}{2}, -6$