Solving Quadratic Equations (A)

Solve each equation for x

1. $-x^2 - 12x - 6 = 21$

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

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

4. $x^2 - 12x + 11 = -21$

5. $x^2 - 7 = 18$

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

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

8. $-x^2 + x + 48 = -24$

9. $-x^2 - 8x - 11 = 4$

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

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

12. $-x^2 + 5x + 32 = -4$

Solving Quadratic Equations (A) Answers

Solve each equation for x

1. $-x^2 - 12x - 6 = 21$
   $-x^2 - 12x - 27 = 0$
   $-(x + 3)(x + 9) = 0$
   $x = -3 \ , \ -9$

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

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

4. $x^2 - 12x + 11 = -21$
   $x^2 - 12x + 32 = 0$
   $(x - 8)(x - 4) = 0$
   $x = 8 \ , \ 4$

5. $x^2 - 7 = 18$
   $x^2 - 25 = 0$
   $(x + 5)(x - 5) = 0$
   $x = -5 \ , \ 5$

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

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

8. $-x^2 + x + 48 = -24$
   $-x^2 + x + 72 = 0$
   $-(x - 9)(x + 8) = 0$
   $x = 9 \ , \ -8$

9. $-x^2 - 8x - 11 = 4$
   $-x^2 - 8x - 15 = 0$
   $-(x + 5)(x + 3) = 0$
   $x = -5 \ , \ -3$

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

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

12. $-x^2 + 5x + 32 = -4$
    $-x^2 + 5x + 36 = 0$
    $-(x + 4)(x - 9) = 0$
    $x = -4 \ , \ 9$

Solving Quadratic Equations (B)

Solve each equation for x

1. $-x^2 - 10x - 9 = 16$

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

3. $-x^2 + 13x - 4 = 32$

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

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

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

7. $x^2 - 10x + 7 = -9$

8. $-x^2 + 3x + 26 = -2$

9. $x^2 - 13x + 18 = -24$

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

11. $-x^2 + 6x + 4 = -23$

12. $-x^2 - 14x - 22 = 26$

Solving Quadratic Equations (B) Answers

Solve each equation for x

1. $-x^2 - 10x - 9 = 16$
   $-x^2 - 10x - 25 = 0$
   $-(x + 5)(x + 5) = 0$
   $x = -5$

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

3. $-x^2 + 13x - 4 = 32$
   $-x^2 + 13x - 36 = 0$
   $(x - 4)(x - 9) = 0$
   $x = 4 , 9$

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

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

6. $-x^2 + 3x + 7 = -3$
   $-x^2 + 3x + 10 = 0$
   $(x - 5)(x + 2) = 0$
   $x = 5 , -2$

7. $x^2 - 10x + 7 = -9$
   $x^2 - 10x + 16 = 0$
   $(x - 8)(x - 2) = 0$
   $x = 8 , 2$

8. $-x^2 + 3x + 26 = -2$
   $-x^2 + 3x + 28 = 0$
   $-(x + 4)(x - 7) = 0$
   $x = -4 , 7$

9. $x^2 - 13x + 18 = -24$
   $x^2 - 13x + 42 = 0$
   $(x - 7)(x - 6) = 0$
   $x = 7 , 6$

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

11. $-x^2 + 6x + 4 = -23$
    $-x^2 + 6x + 27 = 0$
    $-(x + 3)(x - 9) = 0$
    $x = -3 , 9$

12. $-x^2 - 14x - 22 = 26$
    $-x^2 - 14x - 48 = 0$
    $-(x + 6)(x + 8) = 0$
    $x = -6 , -8$

Solving Quadratic Equations (C)

Solve each equation for x

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

2. $x^2 + 8x + 1 = -14$

3. $x^2 - 12x + 13 = -19$

4. $x^2 + x - 9 = 11$

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

6. $-x^2 - x + 2 = 0$

7. $x^2 + 3x - 3 = 37$

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

9. $x^2 - 3x - 4 = 6$

10. $x^2 - 11x + 1 = -17$

11. $-x^2 - x + 7 = -13$

12. $x^2 - 3x - 25 = 15$

Solving Quadratic Equations (C) Answers

Solve each equation for x

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

2. $x^2 + 8x + 1 = -14$
   $x^2 + 8x + 15 = 0$
   $(x + 5)(x + 3) = 0$
   $x = -5 , -3$

3. $x^2 - 12x + 13 = -19$
   $x^2 - 12x + 32 = 0$
   $(x - 8)(x - 4) = 0$
   $x = 8 , 4$

4. $x^2 + x - 9 = 11$
   $x^2 + x - 20 = 0$
   $(x + 5)(x - 4) = 0$
   $x = -5 , 4$

5. $-x^2 + 8x - 6 = 9$
   $-x^2 + 8x - 15 = 0$
   $(x - 3)(x - 5) = 0$
   $x = 3 , 5$

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

7. $x^2 + 3x - 3 = 37$
   $x^2 + 3x - 40 = 0$
   $(x - 5)(x + 8) = 0$
   $x = 5 , -8$

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

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

10. $x^2 - 11x + 1 = -17$
    $x^2 - 11x + 18 = 0$
    $(x - 2)(x - 9) = 0$
    $x = 2 , 9$

11. $-x^2 - x + 7 = -13$
    $-x^2 - x + 20 = 0$
    $-(x + 5)(x - 4) = 0$
    $x = -5 , 4$

12. $x^2 - 3x - 25 = 15$
    $x^2 - 3x - 40 = 0$
    $(x + 5)(x - 8) = 0$
    $x = -5 , 8$

Solving Quadratic Equations (D)

Solve each equation for x

1. $x^2 - 8x - 5 = 4$

2. $x^2 + 2x - 26 = 22$

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

4. $-x^2 + 4x + 45 = 0$

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

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

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

8. $-x^2 + 5x + 32 = -4$

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

10. $-x^2 - 8x + 3 = -6$

11. $-x^2 - 4x + 7 = -14$

12. $-x^2 - 10x - 5 = 11$

Solving Quadratic Equations (D) Answers

Solve each equation for x

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

2. $x^2 + 2x - 26 = 22$
   $x^2 + 2x - 48 = 0$
   $(x + 8)(x - 6) = 0$
   $x = -8 \ , \ 6$

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

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

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

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

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

8. $-x^2 + 5x + 32 = -4$
   $-x^2 + 5x + 36 = 0$
   $-(x - 9)(x + 4) = 0$
   $x = 9 \ , \ -4$

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

10. $-x^2 - 8x + 3 = -6$
    $-x^2 - 8x + 9 = 0$
    $-(x - 1)(x + 9) = 0$
    $x = 1 \ , \ -9$

11. $-x^2 - 4x + 7 = -14$
    $-x^2 - 4x + 21 = 0$
    $-(x + 7)(x - 3) = 0$
    $x = -7 \ , \ 3$

12. $-x^2 - 10x - 5 = 11$
    $-x^2 - 10x - 16 = 0$
    $-(x + 2)(x + 8) = 0$
    $x = -2 \ , \ -8$

Solving Quadratic Equations (E)

Solve each equation for x

1. $x^2 + 12x + 20 = -7$

2. $x^2 - 5x - 8 = 6$

3. $x^2 + 9x + 7 = -13$

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

5. $x^2 + x - 14 = 6$

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

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

8. $-x^2 - 2x + 28 = -20$

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

10. $x^2 + 4x - 19 = 26$

11. $-x^2 + 32 = -32$

12. $-x^2 + 12x - 11 = 24$

Solving Quadratic Equations (E) Answers

Solve each equation for x

1. $x^2 + 12x + 20 = -7$
   $x^2 + 12x + 27 = 0$
   $(x + 3)(x + 9) = 0$
   $x = -3 , -9$

2. $x^2 - 5x - 8 = 6$
   $x^2 - 5x - 14 = 0$
   $(x + 2)(x - 7) = 0$
   $x = -2 , 7$

3. $x^2 + 9x + 7 = -13$
   $x^2 + 9x + 20 = 0$
   $(x + 5)(x + 4) = 0$
   $x = -5 , -4$

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

5. $x^2 + x - 14 = 6$
   $x^2 + x - 20 = 0$
   $(x - 4)(x + 5) = 0$
   $x = 4 , -5$

6. $-x^2 - 8x - 2 = 13$
   $-x^2 - 8x - 15 = 0$
   $(x + 5)(x + 3) = 0$
   $x = -5 , -3$

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

8. $-x^2 - 2x + 28 = -20$
   $-x^2 - 2x + 48 = 0$
   $-(x + 8)(x - 6) = 0$
   $x = -8 , 6$

9. $x^2 + 7x + 7 = -3$
   $x^2 + 7x + 10 = 0$
   $(x + 5)(x + 2) = 0$
   $x = -5 , -2$

10. $x^2 + 4x - 19 = 26$
    $x^2 + 4x - 45 = 0$
    $(x - 5)(x + 9) = 0$
    $x = 5 , -9$

11. $-x^2 + 32 = -32$
    $-x^2 + 64 = 0$
    $-(x - 8)(x + 8) = 0$
    $x = 8 , -8$

12. $-x^2 + 12x - 11 = 24$
    $-x^2 + 12x - 35 = 0$
    $-(x - 5)(x - 7) = 0$
    $x = 5 , 7$

Solving Quadratic Equations (F)

Solve each equation for x

1. $-x^2 + 18x - 63 = 18$

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

3. $x^2 + 7x - 10 = 8$

4. $-x^2 - x + 52 = -20$

5. $x^2 - 17x + 28 = -44$

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

7. $x^2 - 14x + 23 = -25$

8. $x^2 - 20 = 5$

9. $-x^2 + 14x - 28 = 17$

10. $x^2 - 9x + 16 = -4$

11. $x^2 - 17x + 24 = -48$

12. $-x^2 + 3x + 23 = -5$

Solving Quadratic Equations (F) Answers

Solve each equation for x

1. $-x^2 + 18x - 63 = 18$
   $-x^2 + 18x - 81 = 0$
   $-(x - 9)(x - 9) = 0$
   $x = 9$

2. $-x^2 - x + 20 = -10$
   $-x^2 - x + 30 = 0$
   $(x - 5)(x + 6) = 0$
   $x = 5 , -6$

3. $x^2 + 7x - 10 = 8$
   $x^2 + 7x - 18 = 0$
   $(x - 2)(x + 9) = 0$
   $x = 2 , -9$

4. $-x^2 - x + 52 = -20$
   $-x^2 - x + 72 = 0$
   $-(x - 8)(x + 9) = 0$
   $x = 8 , -9$

5. $x^2 - 17x + 28 = -44$
   $x^2 - 17x + 72 = 0$
   $(x - 8)(x - 9) = 0$
   $x = 8 , 9$

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

7. $x^2 - 14x + 23 = -25$
   $x^2 - 14x + 48 = 0$
   $(x - 8)(x - 6) = 0$
   $x = 8 , 6$

8. $x^2 - 20 = 5$
   $x^2 - 25 = 0$
   $(x - 5)(x + 5) = 0$
   $x = 5 , -5$

9. $-x^2 + 14x - 28 = 17$
   $-x^2 + 14x - 45 = 0$
   $-(x - 9)(x - 5) = 0$
   $x = 9 , 5$

10. $x^2 - 9x + 16 = -4$
    $x^2 - 9x + 20 = 0$
    $(x - 4)(x - 5) = 0$
    $x = 4 , 5$

11. $x^2 - 17x + 24 = -48$
    $x^2 - 17x + 72 = 0$
    $(x - 8)(x - 9) = 0$
    $x = 8 , 9$

12. $-x^2 + 3x + 23 = -5$
    $-x^2 + 3x + 28 = 0$
    $-(x - 7)(x + 4) = 0$
    $x = 7 , -4$

Solving Quadratic Equations (G)

Solve each equation for x

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

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

3. $-x^2 - 2x + 15 = -48$

4. $x^2 + 10x + 5 = -11$

5. $-x^2 + 11x - 14 = 10$

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

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

8. $-x^2 - 4x + 1 = -44$

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

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

11. $-x^2 + 12x - 15 = 12$

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

Solving Quadratic Equations (G) Answers

Solve each equation for x

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

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

3. $-x^2 - 2x + 15 = -48$
   $-x^2 - 2x + 63 = 0$
   $(x + 9)(x - 7) = 0$
   $x = -9 , 7$

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

5. $-x^2 + 11x - 14 = 10$
   $-x^2 + 11x - 24 = 0$
   $(x - 3)(x - 8) = 0$
   $x = 3 , 8$

6. $x^2 - 5x - 9 = 15$
   $x^2 - 5x - 24 = 0$
   $(x + 3)(x - 8) = 0$
   $x = -3 , 8$

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

8. $-x^2 - 4x + 1 = -44$
   $-x^2 - 4x + 45 = 0$
   $-(x - 5)(x + 9) = 0$
   $x = 5 , -9$

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

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

11. $-x^2 + 12x - 15 = 12$
    $-x^2 + 12x - 27 = 0$
    $-(x - 9)(x - 3) = 0$
    $x = 9 , 3$

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

Solving Quadratic Equations (H)

Solve each equation for x

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

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

3. $-x^2 - 17x - 41 = 31$

4. $-x^2 - 10x - 1 = 20$

5. $x^2 - 15x + 48 = -8$

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

7. $x^2 + 4x - 31 = 14$

8. $x^2 - 3x - 1 = 17$

9. $-x^2 + 6x + 6 = -21$

10. $-x^2 + 14x - 13 = 36$

11. $-x^2 + 3x + 25 = -3$

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

Solving Quadratic Equations (H) Answers

Solve each equation for x

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

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

3. $-x^2 - 17x - 41 = 31$
   $-x^2 - 17x - 72 = 0$
   $(x + 8)(x + 9) = 0$
   $x = -8 , -9$

4. $-x^2 - 10x - 1 = 20$
   $-x^2 - 10x - 21 = 0$
   $-(x + 7)(x + 3) = 0$
   $x = -7 , -3$

5. $x^2 - 15x + 48 = -8$
   $x^2 - 15x + 56 = 0$
   $(x - 7)(x - 8) = 0$
   $x = 7 , 8$

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

7. $x^2 + 4x - 31 = 14$
   $x^2 + 4x - 45 = 0$
   $(x + 9)(x - 5) = 0$
   $x = -9 , 5$

8. $x^2 - 3x - 1 = 17$
   $x^2 - 3x - 18 = 0$
   $(x - 6)(x + 3) = 0$
   $x = 6 , -3$

9. $-x^2 + 6x + 6 = -21$
   $-x^2 + 6x + 27 = 0$
   $-(x + 3)(x - 9) = 0$
   $x = -3 , 9$

10. $-x^2 + 14x - 13 = 36$
    $-x^2 + 14x - 49 = 0$
    $-(x - 7)(x - 7) = 0$
    $x = 7$

11. $-x^2 + 3x + 25 = -3$
    $-x^2 + 3x + 28 = 0$
    $-(x + 4)(x - 7) = 0$
    $x = -4 , 7$

12. $x^2 - x - 3 = 27$
    $x^2 - x - 30 = 0$
    $(x - 6)(x + 5) = 0$
    $x = 6 , -5$

Solving Quadratic Equations (I)

Solve each equation for x

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

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

3. $x^2 - 8x + 7 = 0$

4. $-x^2 - 14x - 5 = 43$

5. $x^2 + 11x + 19 = -5$

6. $x^2 - 13x + 32 = -8$

7. $-x^2 + 4x + 14 = -31$

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

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

10. $-x^2 + x + 28 = -2$

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

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

Solving Quadratic Equations (I) Answers

Solve each equation for x

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

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

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

4. $-x^2 - 14x - 5 = 43$
   $-x^2 - 14x - 48 = 0$
   $-(x + 8)(x + 6) = 0$
   $x = -8 , -6$

5. $x^2 + 11x + 19 = -5$
   $x^2 + 11x + 24 = 0$
   $(x + 3)(x + 8) = 0$
   $x = -3 , -8$

6. $x^2 - 13x + 32 = -8$
   $x^2 - 13x + 40 = 0$
   $(x - 8)(x - 5) = 0$
   $x = 8 , 5$

7. $-x^2 + 4x + 14 = -31$
   $-x^2 + 4x + 45 = 0$
   $-(x - 9)(x + 5) = 0$
   $x = 9 , -5$

8. $-x^2 + 6x + 8 = -19$
   $-x^2 + 6x + 27 = 0$
   $-(x - 9)(x + 3) = 0$
   $x = 9 , -3$

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

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

11. $-x^2 - 3x + 11 = -7$
    $-x^2 - 3x + 18 = 0$
    $-(x + 6)(x - 3) = 0$
    $x = -6 , 3$

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

Solving Quadratic Equations (J)

Solve each equation for x

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

2. $x^2 + 17x + 6 = -66$

3. $x^2 + 14x + 40 = -8$

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

5. $-x^2 + 6x - 1 = 7$

6. $-x^2 - 11x - 7 = 21$

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

8. $x^2 - 16x + 46 = -17$

9. $x^2 + 15x + 29 = -27$

10. $x^2 - 7 = 42$

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

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

Solving Quadratic Equations (J) Answers

Solve each equation for x

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

2. $x^2 + 17x + 6 = -66$
   $x^2 + 17x + 72 = 0$
   $(x + 9)(x + 8) = 0$
   $x = -9 , -8$

3. $x^2 + 14x + 40 = -8$
   $x^2 + 14x + 48 = 0$
   $(x + 6)(x + 8) = 0$
   $x = -6 , -8$

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

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

6. $-x^2 - 11x - 7 = 21$
   $-x^2 - 11x - 28 = 0$
   $(x + 7)(x + 4) = 0$
   $x = -7 , -4$

7. $-x^2 + 10x - 3 = 6$
   $-x^2 + 10x - 9 = 0$
   $-(x - 1)(x - 9) = 0$
   $x = 1 , 9$

8. $x^2 - 16x + 46 = -17$
   $x^2 - 16x + 63 = 0$
   $(x - 9)(x - 7) = 0$
   $x = 9 , 7$

9. $x^2 + 15x + 29 = -27$
   $x^2 + 15x + 56 = 0$
   $(x + 8)(x + 7) = 0$
   $x = -8 , -7$

10. $x^2 - 7 = 42$
    $x^2 - 49 = 0$
    $(x - 7)(x + 7) = 0$
    $x = 7 , -7$

11. $x^2 + 10x + 3 = -6$
    $x^2 + 10x + 9 = 0$
    $(x + 1)(x + 9) = 0$
    $x = -1 , -9$

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