To find the solutions of a quadratic equation using the quadratic formula, you'll use the formula itself, which is:

x = (-b ± √(b² - 4ac)) / (2a)

Here's a step-by-step explanation:

1. Identify the coefficients:

- Your quadratic equation should be in the form: ax² + bx + c = 0.

- a, b, and c are the coefficients of the equation.

- a is the coefficient of the x² term.

- b is the coefficient of the x term.

- c is the constant term (the term without x).

2. Plug the coefficients into the quadratic formula:

- x = (-b ± √(b² - 4ac)) / (2a)

3. Calculate the discriminant (the value inside the square root):

- Discriminant = b² - 4ac

4. Determine the nature of the solutions based on the discriminant:

- If the discriminant is positive (Discriminant > 0), you have two distinct real solutions.

- If the discriminant is zero (Discriminant = 0), you have one real solution (a repeated root).

- If the discriminant is negative (Discriminant < 0), you have two complex solutions (conjugate pairs).

5. Calculate the solutions by substituting the values back into the formula:

- x₁ = (-b + √Discriminant) / (2a)

- x₂ = (-b - √Discriminant) / (2a)

These values of x₁ and x₂ are the solutions to your quadratic equation. If you have a positive discriminant, you'll get two real solutions. If the discriminant is zero, you'll get one real solution, and if it's negative, you'll get two complex solutions.