The Quadratic Formula is ... The answer to ALL my problems!

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Disclosure: Let a, b, and c be real numbers where a ≠ 0 in an equation: $ax^2 + bx + c = 0$

Steps to using the Quadratic Formula

1. Rewrite equation in standard form.
2. Identify a, b, and c.
3. Plug a, b, and c into the formula.
4. Simplify COMPLETELY.

The Discriminant

$$b^2 - 4ac$$

If the discriminant is <u>positive</u>:

If the discriminant is <u>0</u>:

If the discriminant is <u>negative</u>:

Find the discriminant and use it to decide how many roots your quadratic equation has.

$x^2 + 6x + 11 = 0$ $x^2 + 6x + 9 = 0$ $x^2 + 6x + 5 = 0$

Solve Using the Quadratic Formula

Ex 1) $x^2 - 5x = 4$

Ex 2) $4x^2 + 10x = -10x - 25$

Ex. 3) $x^2 + 6x + 9 = 0$