

## 4.6 Notes: The Quadratic Formula

### Objectives:

- 1) Solve quadratic equations using the Quadratic Formula.
- 2) Classify roots using the discriminant.

### Warm-Up

1. Solve:  $9x^2 + 25 = 0$

2. Find the roots of:  $2x^2 + 4x + 9 = 0$

### The Quadratic Formula:

$$ax^2 + bx + c = 0 \longrightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

EX:  $2x^2 + x = 3$

**Step 1: Change to standard form.**

**Step 2: Identify a, b, c.**

**Step 3: Substitute the values to formula**

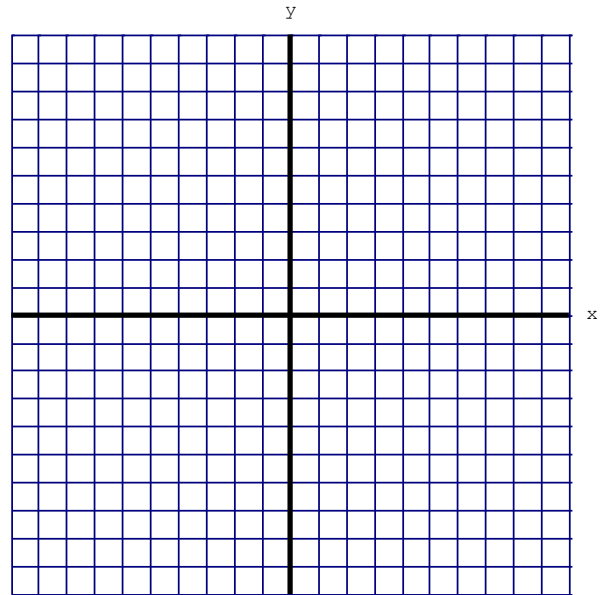
**Step 4: Simplify and find x.**

Ex. Solve using the Quadratic Formula

$$f(x) = 2x^2 + 25x + 33$$

Ex. Solve using the Quadratic Formula & Graph.

$$-2x^2 + 8x = -12$$



Solve using the quadratic formula:

$$f(x) = x^2 - 8x + 9$$

$$f(x) = 2x^2 + 6x - 7$$

$$f(x) = 3x^2 + 5x + 1$$

$$f(x) = x^2 + 34x + 289$$