

The Quadratic Formula

$$ax^2 + bx + c = 0$$

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The L^AT_EX Project

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- $\left(x + \frac{b}{2a}\right)^2 = -\frac{c}{a} + \left(\frac{b}{2a}\right)^2$

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- $\left(x + \frac{b}{2a}\right)^2 = -\frac{c}{a} + \left(\frac{b}{2a}\right)^2$
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- $x + \left(\frac{b}{2a}\right) = \pm \sqrt{-\frac{c}{a} + \left(\frac{b}{2a}\right)^2}$
- $x = -\left(\frac{b}{2a}\right) \pm \sqrt{-\frac{c}{a} + \left(\frac{b}{2a}\right)^2}$

Solve for x

Now, solve for x

$$\blacksquare \left(x + \frac{b}{2a}\right)^2 = -\frac{c}{a} + \left(\frac{b}{2a}\right)^2$$

$$\blacksquare x + \left(\frac{b}{2a}\right) = \pm \sqrt{-\frac{c}{a} + \left(\frac{b}{2a}\right)^2}$$

$$\blacksquare x = -\left(\frac{b}{2a}\right) \pm \sqrt{-\frac{c}{a} + \left(\frac{b}{2a}\right)^2}$$

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

The Quadratic Formula

The solution of the quadratic equation.

$$ax^2 + bx + c = 0$$

where a is non-zero, is given by the formula

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