

Using the Quadratic Formula

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The Quadratic Formula

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

Solve $x^2 + 9x + 18 = 0$

$$a = 1$$

$$b = 9$$

$$c = 18$$

$$\frac{-9 \pm \sqrt{9^2 - (4 \times 1 \times 18)}}{2 \times 1}$$

$$\frac{-9 + 3}{2} \text{ or } \frac{-9 - 3}{2}$$

$$x = -3 \text{ or } x = -6$$

Solve $5x^2 + 8x - 12 = 0$

$$a = 5$$

$$b = 8$$

$$c = -12$$

$$\frac{-8 \pm \sqrt{8^2 - (4 \times 5 \times -12)}}{2 \times 5}$$

$$\frac{-8 + \sqrt{304}}{10} \text{ or } \frac{-8 - \sqrt{304}}{10}$$

$$x = 0.94 \text{ or } x = -2.54$$