

Quadratic Formula

↳ used to solve quadratic equations

Quadratic Equation in the form

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

Quad Formula:

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

Use quadratic formula to solve quadratic equations

Use Quadratic Formula to solve:

① $x^2 - 6x + 6 = 0$

$a=1, b=-6, c=6$

$$x = \frac{6 \pm \sqrt{(-6)^2 - 4(1)(6)}}{2(1)}$$

$$x = \frac{6 \pm \sqrt{12}}{2}$$

$\sqrt{12}$
6 2
3 2

$$x = \frac{6 \pm 2\sqrt{3}}{2}$$

$$x = \frac{3 \pm 1\sqrt{3}}{1} \Rightarrow \boxed{3 \pm \sqrt{3}}$$

$$\textcircled{2} \quad x^2 - 3x + 2 = 0$$

$$a=1 \quad b=-3 \quad c=2$$

$$x = \frac{3 \pm \sqrt{(-3)^2 - 4(1)(2)}}{2(1)}$$

$$x = \frac{3 \pm \sqrt{1}}{2}$$

$$x = \frac{3 \pm 1}{2}$$

$$x = \frac{3+1}{2} = \frac{4}{2}$$

$$x = 2$$

$$x = \frac{3-1}{2}$$

$$x = \frac{2}{2}$$

$$x = 1$$

$$\textcircled{3} \quad 8x^2 - 7x = -2$$

$$+2 \quad +2$$

$$8x^2 - 7x + 2 = 0$$

$$a=8 \quad b=-7 \quad c=2$$

$$x = \frac{7 \pm \sqrt{(-7)^2 - 4(8)(2)}}{2(8)}$$

$$x = \frac{7 \pm \sqrt{-15}}{16}$$

$$x = \frac{7 \pm i\sqrt{15}}{16}$$