

$$\text{ex: } \frac{1}{3}x^2 - \frac{7}{2}x + 5 = 0$$

$$6\left(\frac{1}{3}x^2\right) + 6\left(-\frac{7}{2}x\right) + 6(5) = 6(0)$$

$$2x^2 - 21x + 30 = 0$$

⋮

$$\text{ex: } \begin{matrix} 0 \\ 0 \\ 0 \end{matrix}$$

$$\frac{5 \pm \sqrt{7}}{10}$$

$$\text{ex: } \begin{matrix} 0 \\ 0 \\ 0 \end{matrix}$$

$$\frac{5 \pm 15\sqrt{7}}{10}$$

$$\frac{1 \pm 3\sqrt{7}}{2}$$

$$\text{ex: } (\sin x)^2 + 5 \sin x + 6 = 0$$

$$a=1 \quad b=5 \quad c=6$$

$$\sin x = \frac{-5 \pm \sqrt{5^2 - 4(1)(6)}}{2(1)}$$

⋮

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

$$\frac{ax^2}{a} + \frac{bx}{a} + \frac{c}{a} = \frac{0}{a}$$

$$x^2 + \frac{b}{a}x + \frac{c}{a} = 0$$

$$x^2 + \frac{b}{a}x = -\frac{c}{a}$$

$$x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = -\frac{c}{a} + \frac{b^2}{4a^2}$$

$$x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = \frac{b^2}{4a^2} - \frac{c}{a}$$

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

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

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$$

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

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

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

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

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

$\left(\frac{b}{2a}\right)^2$
 $\left(\frac{b}{2a}\right)^2$
 $\frac{c}{4a^2}$