EQUAZIONI DI 2° GRADO

① $x^2 - 7x + 10 = 0$

$$x_{12} = \frac{7 \pm \sqrt{49-40}}{2} = \begin{cases} \frac{7+3}{2} = 5 \\ \frac{7-3}{2} = 2 \end{cases}$$

② $x^2 + 5x + 6 = 0$

$$x_{12} = \frac{-5 \pm \sqrt{25-24}}{2} \begin{cases} \frac{-5+1}{2} = -2 \\ \frac{-5-1}{2} = -3 \end{cases}$$

③ $x^2 + 2x - 3 = 0$

$$x_{12} = \frac{-2 \pm \sqrt{4+12}}{2} = \begin{cases} \frac{-2+4}{2} = 1 \\ \frac{-2-4}{2} = -3 \end{cases}$$

④ $2x^2 + 7x + 3 = 0$

$$x_{12} = \frac{-7 \pm \sqrt{49-24}}{4} \begin{cases} \frac{-7+5}{4} = -\frac{1}{2} \\ \frac{-7-5}{4} = -3 \end{cases}$$

⑤ $25x^2 - 20x + 4 = 0$

$$x_{12} = \frac{20 \pm \sqrt{400-400}}{50} = x_1 = x_2 = \frac{1}{2}$$

⑥ $x^2 - 5x + 6 = 0$

$$x_{12} = \frac{5 \pm \sqrt{25-24}}{2} = \begin{cases} \frac{5+1}{2} = 3 \\ \frac{5-1}{2} = 2 \end{cases}$$

⑦ $(2x+1)^2 - (x-3)^2 = 0 \rightarrow 4x^2 + 1 + 4x - x^2 - 9 + 6x = 0 \rightarrow$

$3x^2 + 10x - 8 = 0$

$$x_{12} = \frac{-10 \pm \sqrt{100+96}}{6} = \begin{cases} \frac{-10+14}{6} = \frac{2}{3} \\ \frac{-10-14}{6} = -4 \end{cases}$$

⑧ $\frac{1}{3}(3-x) + \frac{x^2-1}{6} - \frac{2}{3} = 0$

$6 - 2x + x^2 - 1 - 4 = 0 \rightarrow x^2 - 2x + 1 = 0$

$$x_{12} = \frac{+2 \pm \sqrt{4-4}}{2} = x_1 = x_2 = 1$$

⑨ $4x(2-x) + (x-2) = -11$

$8x - 4x^2 + x - 2 + 11 = 0 \rightarrow -4x^2 + 9x + 9 = 0 \rightarrow 4x^2 - 9x - 9 = 0$

$$x_{12} = \frac{9 \pm \sqrt{81+144}}{8} = \begin{cases} \frac{9+15}{8} = 12 \\ \frac{9-15}{8} = -3 \end{cases}$$