

# EQUAZIONI DI SECONDO GRADO

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

$$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-\beta \pm \sqrt{\beta^2 - ac}}{a}$$

$$\beta := \frac{b}{2} \quad \Delta := b^2 - 4ac$$

→ ERRORI DI CANCELLAZIONE

Esempi

i)  $a = 1 \quad b = 2 \quad c = 1 \quad \rightarrow x_{1,2} = -1$

ii)  $a = 1 \quad b = -2 \quad c = -3 \quad \rightarrow x_{1,2} = -1; 3$

iii)  $a = 1 \quad b = -54.32 \quad c = 0.1$

→ se usassimo 4 cifre

$$\begin{aligned} \sqrt{b^2 - 4ac} &= \sqrt{(54.32)^2 - 0.4} = \sqrt{2951 - 0.4000} = \\ &= \sqrt{2951} = 54.32 \end{aligned}$$

$$x_2 = 0 !!$$

iiii)  $a = 10^{-6} \quad b = 0.8 \quad c = -1.2 \times 10^{-8}$

$$x_{1,2} = \frac{-0.4 \pm \sqrt{0.16 + 1.2 \times 10^{-14}}}{10^{-6}}$$