

# DISEQUAZIONI DI GRADO SUPERIORE AL II



## DISUGUAZIONI MONOMIE

$$4x^8 \leq 0$$

- SE LA POTENZA É PARI O É MAGGIORE OPPURE  
É UGUALE A ZERO

Solo  $x=0$

- SE LA POTENZA É DISPARI SI TOGLIE L'ESPOLENTE

$$-10x^{10} \geq 0$$

$$x=0$$

$$(3-x)^6 > 0$$

$$3-x \neq 0$$

$$3 \neq x$$

## DISUGUAZIONI BINOMIE

$$x^2 + 1 > 0$$

$$\forall x \in \mathbb{R}$$

POS

$$x^6 - 64 \geq 0$$

$$x^6 = (x^3)^2$$

CHIAMO  $x^3 = t$

$$\rightarrow t^2 - 64 \geq 0$$

$$t^2 - 64 = 0 \quad \text{Eq. ASS.}$$

POS

$$t_1 = +\sqrt{64}$$

$$t_2 = -\sqrt{64}$$

$$t_1 = 8$$

$$t_2 = -8$$

$$t \leq -8$$

$$\vee \quad t \geq 8$$

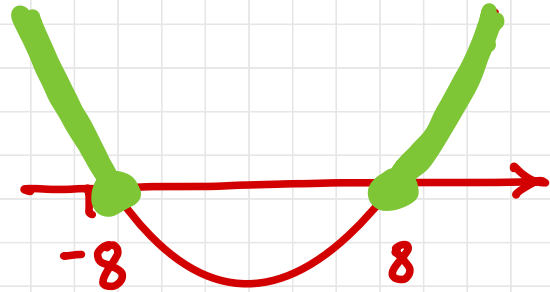
$$x^3 \leq -8$$

$$\vee \quad x^3 \geq 8$$

$$\rightsquigarrow x^3 \leq -2^3$$

$$x \leq -2$$

$$\vee \quad x \geq 2$$



# DISEQUAZIONI TRINOMIE

$$x^8 - 15x^4 - 16 \geq 0$$

$$ax^{2n} + bx^n + c \geq 0$$

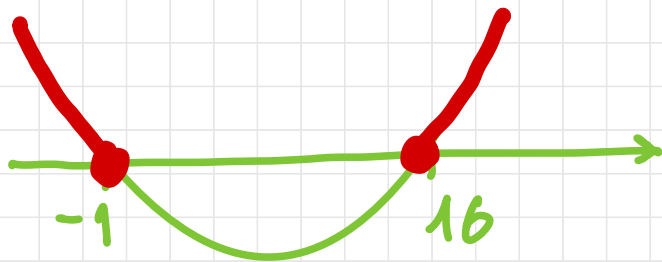
$$x^4 = t$$

$$t^2 - 15t - 16 \geq 0 \quad \text{SI PUÒ FARE SOLO SE } 2n \dots n \dots \neq \geq 0$$

$$t^2 - 15t - 16 = 0 \quad \text{Eq. ASS.} \quad a = 1 \quad ; \quad b = -15 \quad ; \quad c = -16$$

$$\Delta = 225 + 64 = 289$$

$$t_{1,2} = \frac{15 \pm 17}{2} \quad \left\{ \begin{array}{l} t_1 = 16 \\ t_2 = -1 \end{array} \right.$$



$$t \leq -1 \quad \vee \quad t \geq 16$$

~~$$x \leq -1$$~~

$$\vee \quad x^4 \geq 16$$

→

$$x \geq 2$$

?

NO

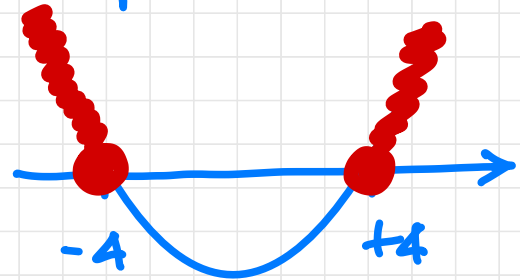
$$x^4 \rightarrow (x^2)^2 \rightarrow \text{pongo } x^2 = p$$

$$b^2 \geq 16 \rightarrow p^2 - 16 \geq 0$$

$$p^2 - 16 = 0 \text{ E.A.S.}$$

$$p_1 = 4$$

$$p_2 = -4$$



$$p \leq -4 \vee p \geq +4$$

$$x^2 \leq -4 \vee x^2 \geq 4$$

$$x^2 - 4 \geq 0 \text{ E.P.A.S.}$$

$$x_1 = 2 \quad x_2 = -2$$



$$x \leq -2 \vee x \geq 2$$