

# EQUAZIONI GONIOMETRICHE LINEARI



M4019

DATA L'EQUAZIONE:  $a \sin'x + b \cos'x + c = 0$  I GRADO

CASO  $c=0$

$a \neq 0$   $b \neq 0$

$$\cos x - \sin x = 0$$

$\div \cos x$  TANTO  $x \neq \frac{\pi}{2} + k\pi$

PERCHÉ SE FOSSE  $x = \frac{\pi}{2}$

$$a \cdot 1 + b \cdot 0 = 0$$

$a = 0$  INVECE  $a \neq 0$  DEF.

$$\frac{\cos x}{\cos x} - \frac{\sin x}{\cos x} = 0 \rightarrow$$

$$1 - \operatorname{tg} x = 0$$

$$\operatorname{tg} x = 1 \quad x = \frac{\pi}{4} + k\pi$$

$$c \neq 0) \quad \cos x - \sin x = 1$$

$$\div \cos x$$

$$1 - \operatorname{tg} x = \frac{1}{\cos x} !$$

## METODO FORMULE PARAMETRICHE

$$\frac{1-t^2}{1+t^2} - \frac{2t}{1+t^2} = 1$$

$$\frac{\cancel{1-t^2} - 2t}{\cancel{1+t^2}} = \frac{\cancel{1+t^2}}{\cancel{1+t^2}}$$

$$2t^2 + 2t = 0$$

$$2t(t+1) = 0$$

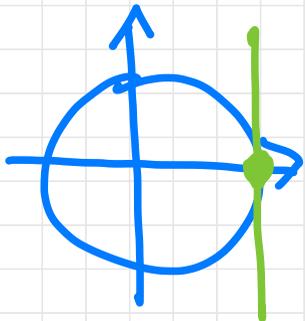
$$\sin x = \frac{2t}{1+t^2}$$

$$\cos x = \frac{1-t^2}{1+t^2}$$

$$t = \operatorname{tg} \frac{x}{2}$$

$$t_1 = 0$$

$$\operatorname{tg} \frac{x}{2} = 0$$

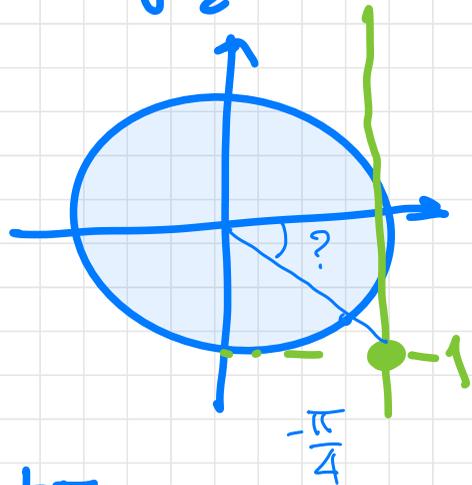


$$\frac{x}{2} = 0 + k\pi$$

$$x = 2k\pi$$

$$(t+1) = 0 \rightarrow t_2 = -1$$

$$\operatorname{tg} \frac{x}{2} = -1$$



$$\cancel{x} \frac{x}{2} = -\frac{\pi}{4} + k\pi \quad \times 2$$

$$x = -\frac{\pi}{2} + 2k\pi$$

## METODO GRAFICO

$$\cos x - \sin x = 1$$

$$X - Y = 1$$

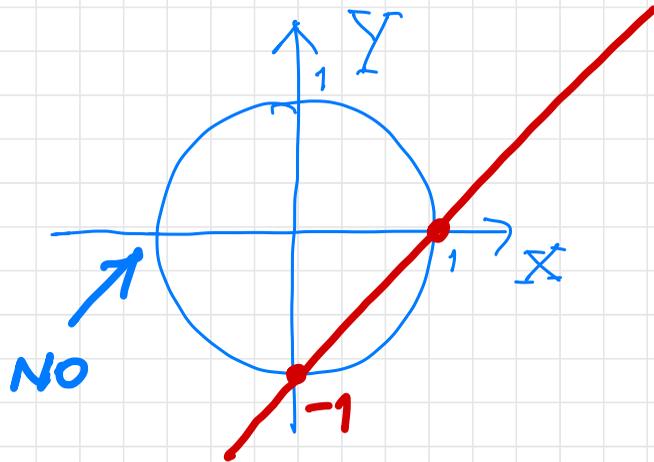
$$Y = X - 1$$

$$A \begin{cases} X - Y = 1 \\ X^2 + Y^2 = 1 \end{cases}$$

$$A \rightarrow X = 1 + Y \quad \text{SOSTITUISCO} \quad (1 + Y)^2 + Y^2 = 1$$

IL SENO È UNA Y  
IL COSENO È UNA X

$$\sin^2 x + \cos^2 x = 1$$
$$Y^2 + X^2 = 1$$



$$\cancel{1} + y^2 + 2y + y^2 = \cancel{1}$$

$$y = 0$$

$$y = -1$$

$$\sin x = 0 \rightarrow x = 0 + 2k\pi$$

$$\sin x = -1 \rightarrow x = -\frac{\pi}{2} + 2k\pi$$