

# GONIOMETRICHE RICONDUCIBILI A QUELLE ELEMENTARI



M4016

$$\bullet) \quad \sin^3 4x + 1 = 0$$

$$t = \sin 4x$$

$$t^3 + 1 = 0$$

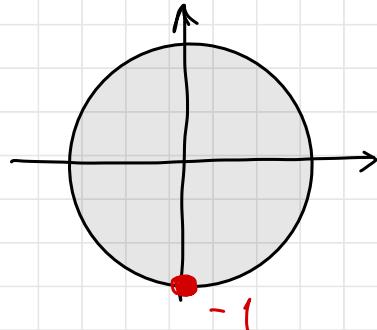
$$t^3 = -1$$

$$\sqrt[3]{t^3} = \sqrt[3]{-1}$$

$$t = -1 \rightarrow \sin 4x = -1$$

$$4x = \frac{3}{2}\pi + 2k\pi$$

$$x = \frac{3}{8}\pi + \frac{1}{2}k\pi$$



$$\bullet) \quad \sin x \operatorname{tg} x - \sin x = 0$$

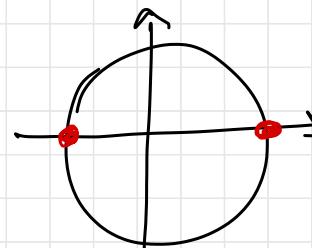
$$\sin x (\operatorname{tg} x - 1) = 0$$

$$\sin x = 0 \quad A$$

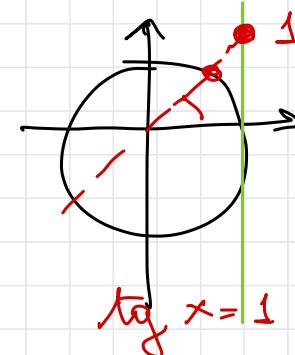
$$\operatorname{tg} x - 1 = 0 \quad B \rightarrow \operatorname{tg} x = 1$$

A)  $x = k\pi$

B)  $x = \frac{\pi}{4} + k\pi$



$\sin x = 0$



$\tan x = 1$

•)  $2\cos^2 x - 3\cos x + 1 = 2\sin^2 x$

$$2\cos^2 x - 3\cos x + 1 = 2(1 - \cos^2 x)$$

$$2\cos^2 x - 3\cos x + 1 = 2 - 2\cos^2 x$$

$$4\cos^2 x - 3\cos x - 1 = 0$$

$$t = \cos x$$

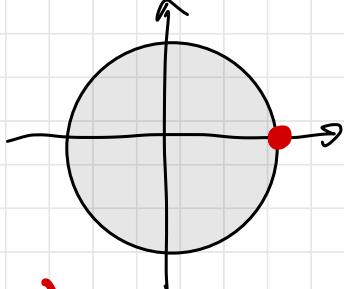
$$4t^2 - 3t - 1 = 0 \quad a=4 \quad b=-3 \quad c=-1$$

$$\Delta = 9 - 4 \cdot 4 \cdot (-1) = 25$$

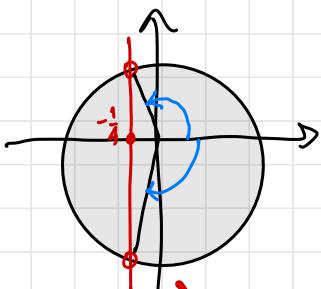
$$t_{1,2} = \frac{3 \pm 5}{8} = \begin{cases} t_1 = 1 \\ t_2 = -\frac{1}{4} \end{cases}$$

A)  $\cos x = 1$

B)  $\cos x = -\frac{1}{4}$



$$A) x = 0 + 2k\pi$$



$$B) x = \arccos\left(-\frac{1}{4}\right) + 2k\pi$$

$$x = -\arccos\left(-\frac{1}{4}\right) + 2k\pi$$

$$\bullet) \frac{2}{\sqrt{2-\sin x}} - \sqrt{\sin x} = \sqrt{2+\cos\left(\frac{\pi}{2}+x\right)}$$

$$\frac{2}{\sqrt{2-\sin x}} - \sqrt{\sin x} = \sqrt{2-\sin x}$$

$$\frac{z - \sqrt{\sin x} \cdot \sqrt{z - \sin x}}{\sqrt{z - \sin x}} = \frac{(\sqrt{z - \sin x})^2}{\sqrt{z - \sin x}}$$

C.E.

$$z - \sin x \neq 0$$

$$z \neq \sin x$$

$$z - \sqrt{\sin x(z - \sin x)} = z - \sin x$$

$$\sin x = t$$

$$z - \sqrt{zt - t^2} = z - t$$

$$\begin{cases} \sin x \geq 0 \\ z - \sin x > 0 \end{cases}$$

$$-\sqrt{zt - t^2} = z - t - 2$$

$$(\sqrt{zt - t^2})^2 = (t)^2 \rightarrow$$

$$zt - t^2 = t^2 \quad zt^2 - zt = 0$$

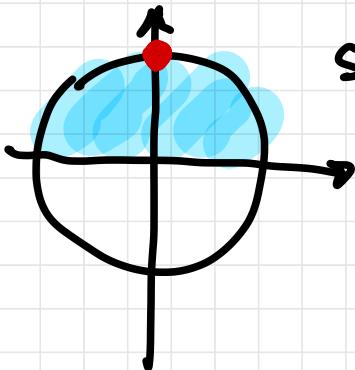
$$t^2 - t = 0 \quad t(t-1) = 0$$

$$t_1 = 0 \quad ; \quad t_2 = 1$$

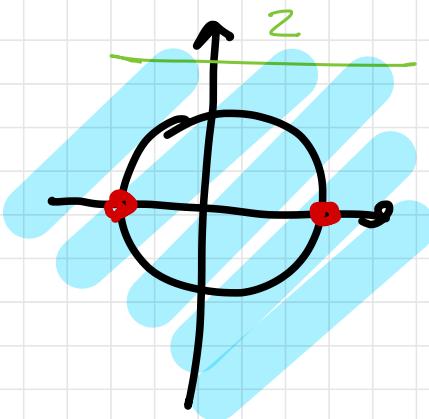
$$\sin x = 0 \rightarrow x = +k\pi$$

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

SONO IN ACCORDO CON LE C.E.?

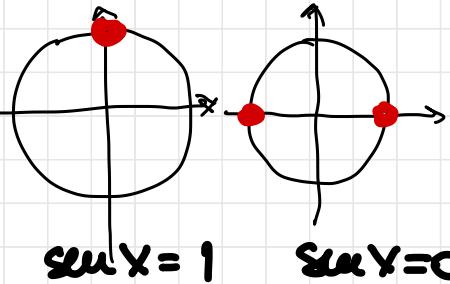


$$\sin x \geq 0$$



$$z - \sin x > 0$$

$$z > \sin x$$



$$\sin y = 1$$

$$\sin y = 0$$