

ES. N° 53

$$\cos\left(x - \frac{\pi}{6}\right) \neq 0$$

$$\cos\left(x - \frac{\pi}{6}\right) \neq$$

$$\neq \cos\left(\frac{\pi}{2} + k\pi\right)$$

$$k \in \mathbb{Z}$$

$$x - \frac{\pi}{6} \neq \frac{\pi}{2} + k\pi$$

$$x \neq \frac{3+\pi}{6} + k\pi$$

$$x \neq \frac{2}{3}\pi + k\pi$$

$$k \in \mathbb{Z}$$

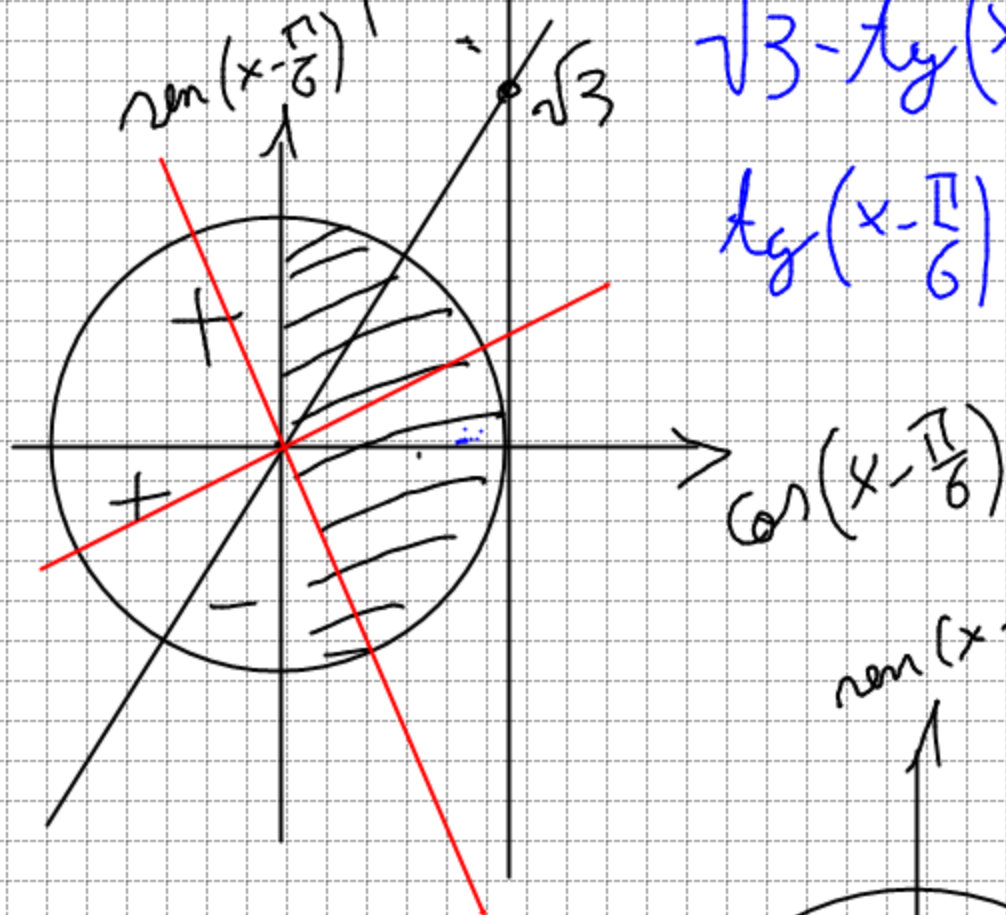
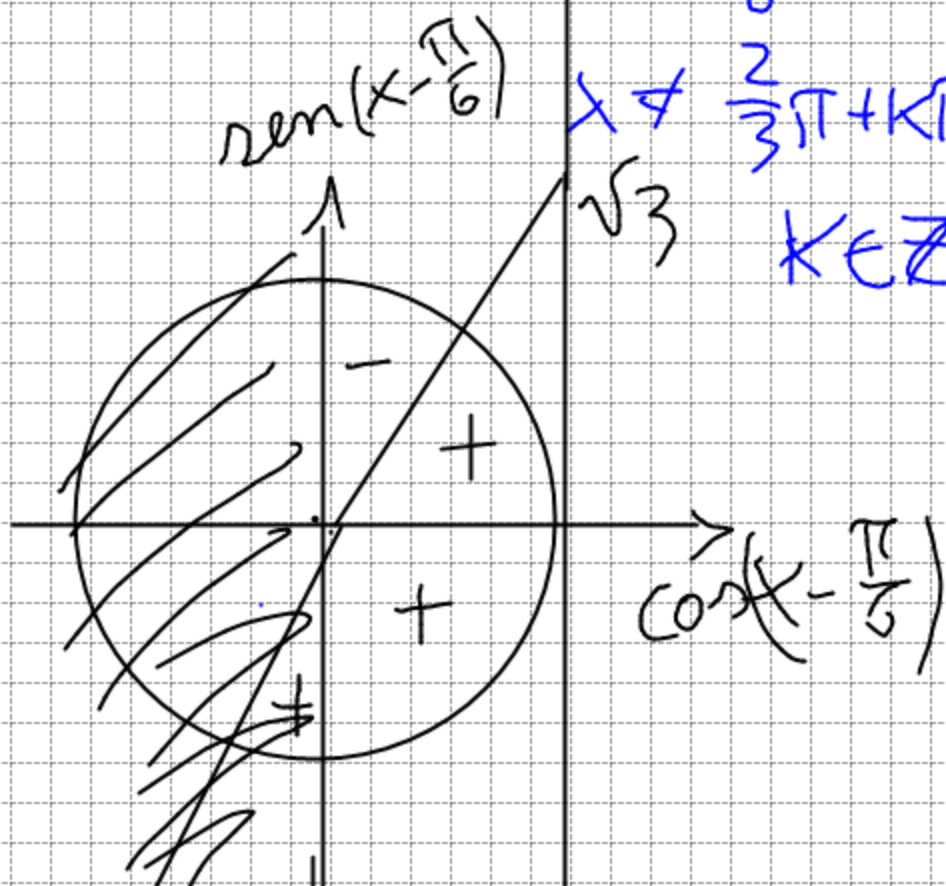
$$\sqrt{3}\cos\left(x - \frac{\pi}{6}\right) - \tan\left(x - \frac{\pi}{6}\right) > 0$$

$$\sqrt{3} - \tan\left(x - \frac{\pi}{6}\right) > 0$$

$$\tan\left(x - \frac{\pi}{6}\right) < \sqrt{3}$$

$$\begin{cases} \cos\left(x - \frac{\pi}{6}\right) > 0 \\ \sqrt{3} - \tan\left(x - \frac{\pi}{6}\right) < 0 \end{cases}$$

$$\cup \begin{cases} \cos\left(x - \frac{\pi}{6}\right) < 0 \\ \sqrt{3} - \tan\left(x - \frac{\pi}{6}\right) > 0 \end{cases}$$



$$\sqrt{3} - \tan\left(x - \frac{\pi}{6}\right) > 0$$

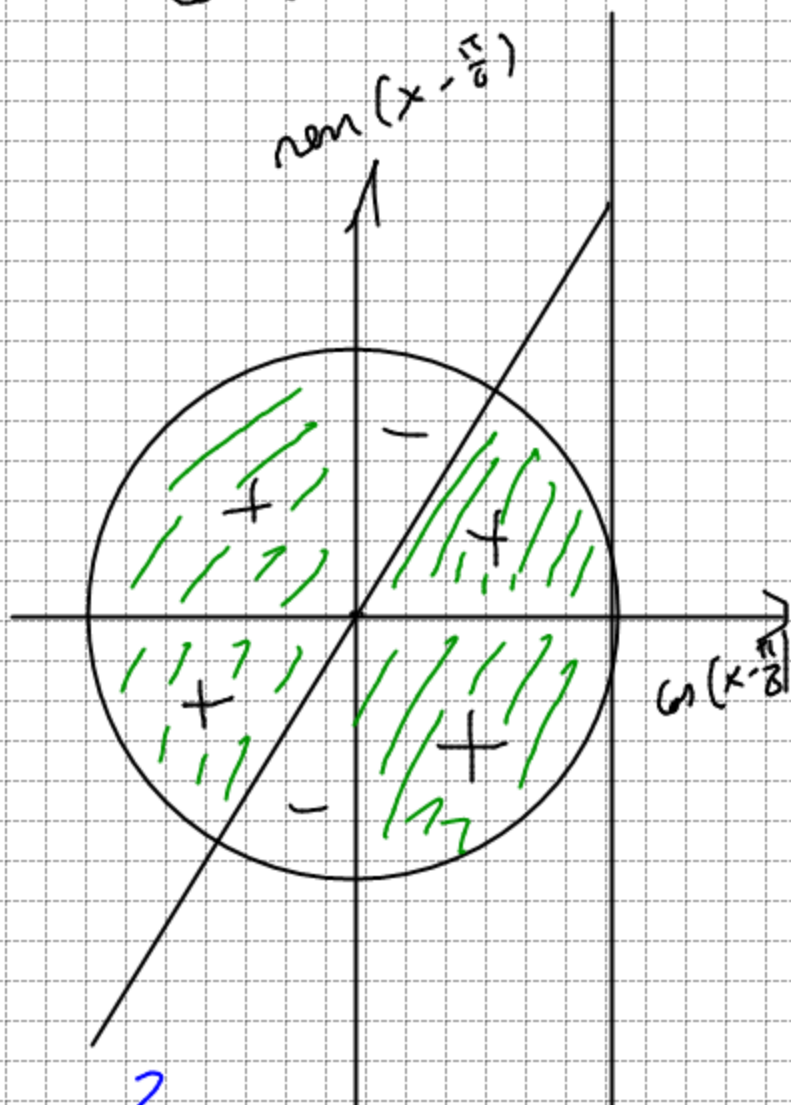
$$\tan\left(x - \frac{\pi}{6}\right) < \sqrt{3}$$

SOLUZIONI:

$$-\frac{\pi}{2} + k\pi < x - \frac{\pi}{6} < \frac{\pi}{3} + k\pi$$

$$-\frac{3+\pi}{6} + k\pi < x < \frac{1+2\pi}{6} + k\pi$$

$$-\frac{\pi}{3} + k\pi < x < \frac{\pi}{2} + k\pi \cup x \neq \frac{2}{3}\pi + k\pi$$



ES. N° 52

$$\sin\left(x - \frac{\pi}{3}\right) + \cos\left(x + \frac{\pi}{3}\right) \leq 0$$

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$$\sin x \cos \frac{\pi}{3} - \sin \frac{\pi}{3} \cos x + \cos x \cos \frac{\pi}{3} - \sin x \sin \frac{\pi}{3} \leq 0$$

$$\frac{1}{2} \sin x - \frac{\sqrt{3}}{2} \cos x + \frac{1}{2} \cos x - \frac{\sqrt{3}}{2} \sin x \leq 0$$

$$\frac{1 - \sqrt{3}}{2} \sin x + \frac{1 - \sqrt{3}}{2} \cos x \leq 0$$

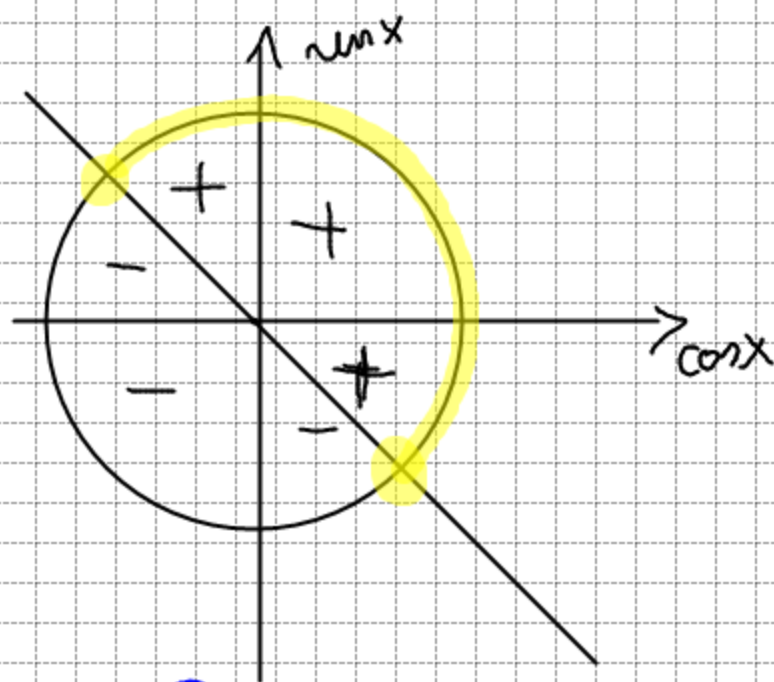
$$\frac{1 - \sqrt{3}}{2} (\sin x + \cos x) \leq 0$$

PONGO $\sin x = Y$

$\cos x = X$

$$\frac{\sqrt{3} - 1}{2} (\sin x + \cos x) \geq 0$$

$$\begin{cases} Y + X \geq 0 \\ Y^2 + X^2 = 1 \end{cases}$$



SOLUZIONE/ : $-\frac{\pi}{3} + k\pi \leq x \leq \frac{3}{5}\pi + k\pi$

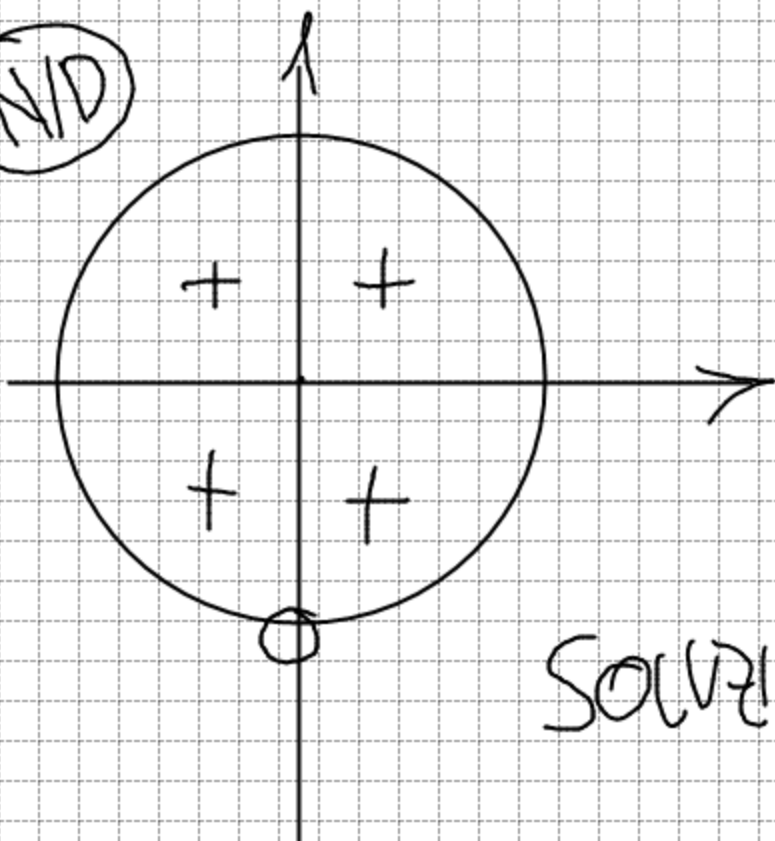
N° 106

$$\frac{\operatorname{Re} x}{\operatorname{Re} x + 1} > 1$$

$$\frac{\cancel{\operatorname{Re} x} - \cancel{\operatorname{Re} x} - 1}{\operatorname{Re} x + 1} > 0$$

$$-\frac{1}{\operatorname{Re} x + 1} > 0 \Leftrightarrow \frac{1}{\operatorname{Re} x + 1} < 0$$

(N/D)

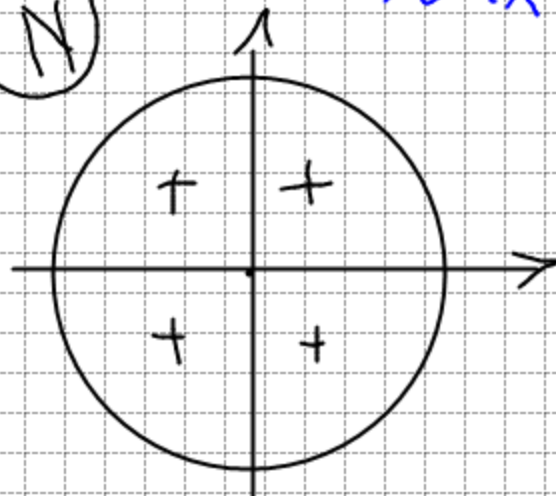


$$N > 0 \Rightarrow 1 > 0$$

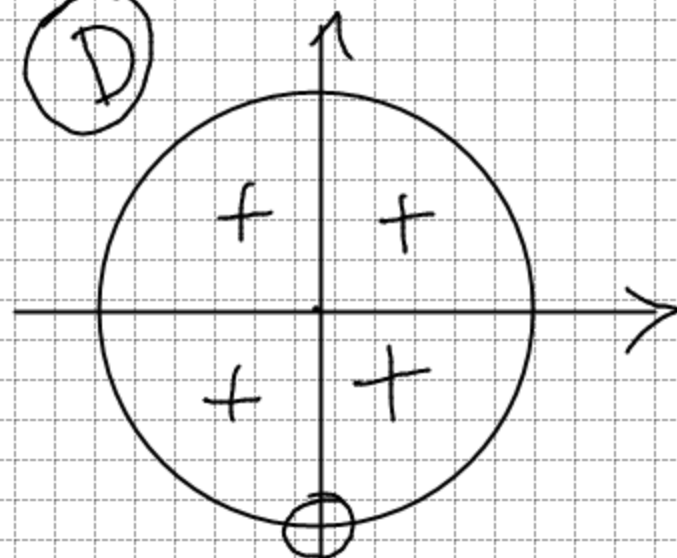
$$D > 0 \Rightarrow \operatorname{Re} x > -1$$

$$\operatorname{Re} x \neq -\frac{\pi}{2} + 2k\pi$$

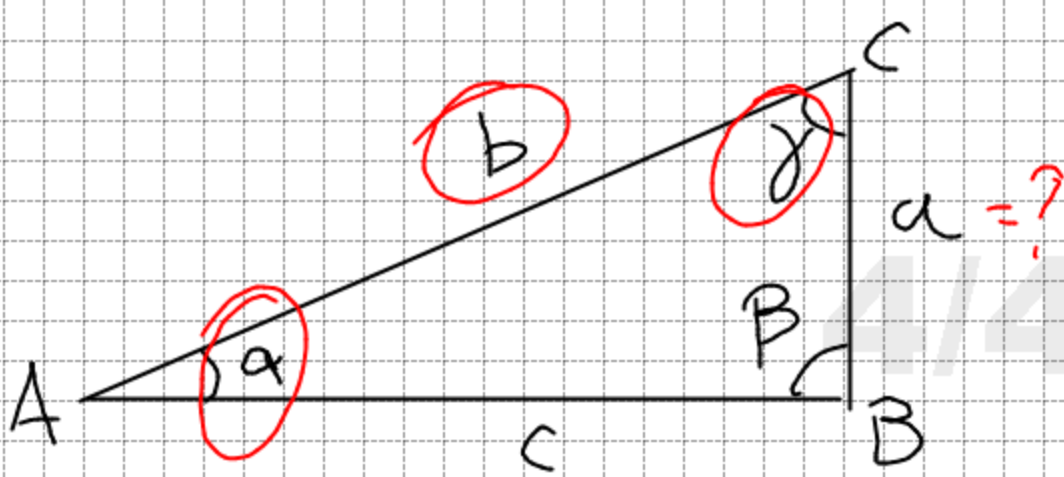
(N)



(D)



SOLUZIONI: NON ESISTONO



$$\frac{b}{a} = \tan \alpha \quad \times$$

$$a = b \cdot \sec \alpha$$

$$a = b \cdot \cos \alpha$$

$$\overline{AG} = \frac{2}{3}a \quad ; \quad \overline{GM} = \frac{1}{3}a$$

$$\overline{CG} = \sqrt{a^2 - \frac{1}{9}a^2} = \frac{2\sqrt{2}}{3}a$$

$$\overline{AG} = \sqrt{\frac{4}{9}a^2 + \frac{8}{9}a^2} = \frac{2\sqrt{3}}{3}a$$

$$AB = \sqrt{4a^2 - \frac{12}{9}a^2} = \frac{2\sqrt{6}}{3}a$$

$$\frac{AB}{BC} = \frac{\frac{2\sqrt{6}a}{3}}{2a} = \frac{2\sqrt{6} \cdot \frac{1}{3}}{2 \cdot 1} = \frac{\sqrt{6}}{3} = \sqrt{\frac{2}{3}}$$

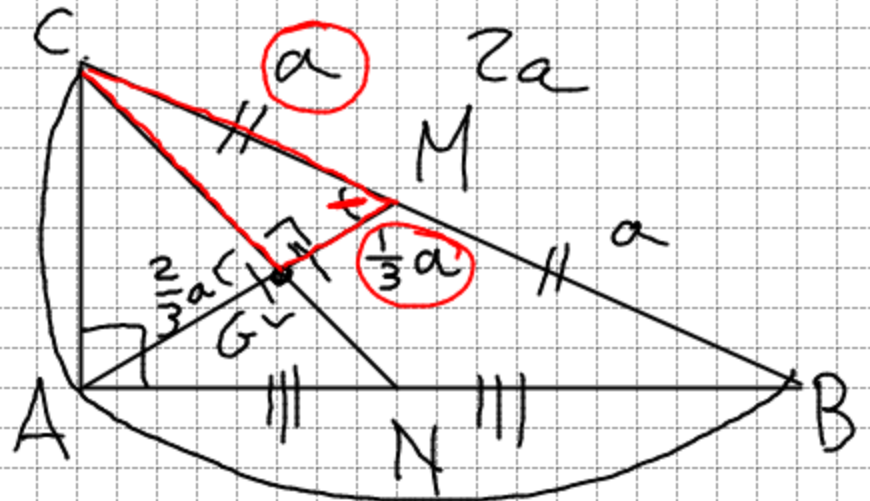
$$\cos \hat{M}G = \frac{1}{3}$$

$$\hat{M}A = 2 \hat{C}BA \quad \hat{M}G = 2 \hat{C}BA$$

$$\cos(2 \hat{C}BA) = \frac{1}{3}$$

$$\cos^2 \hat{C}BA - \sin^2 \hat{C}BA = \frac{1}{3}$$

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$$\frac{AB}{BC} = \sqrt{\frac{2}{3}} \quad BC = 2a \quad AM = \pi$$

$$\cos(\hat{M}G) = \cos(\hat{C}BA)$$

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