

DISEQUAZIONI GONIOMETRICHE



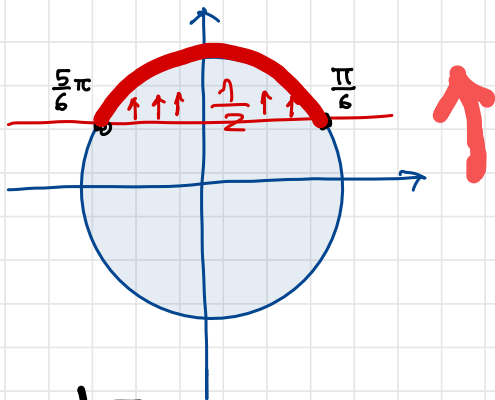
M4023

UNA DISEQUAZIONE GONIOMETRICA ELEMENTARE È NELLA

FORMA : $\sin x \geq a$; $\cos x \geq a$; $\tan x \leq a$

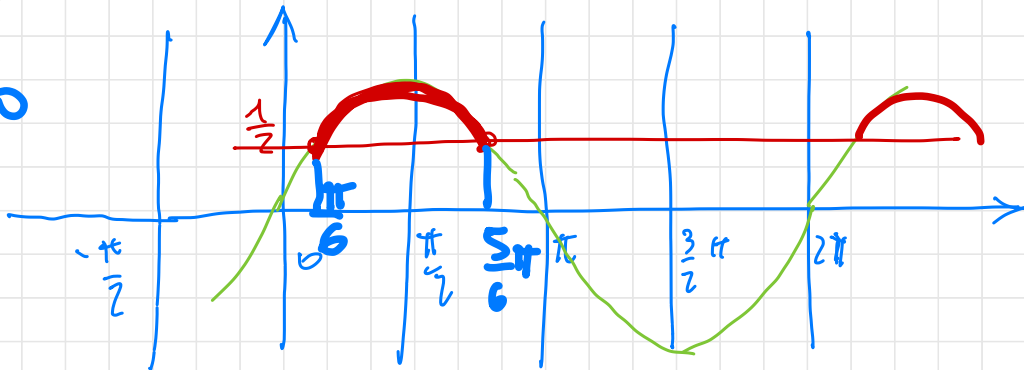
ESEMPIO

$$\sin x > \frac{1}{2}$$



$$2k\pi + \frac{\pi}{6} < x < \frac{5\pi}{6} + 2k\pi$$

ALTRO METODO



CASO NON ELEMENTARE

$$\sqrt{2} \sin^2 x - \sin x \geq 0$$

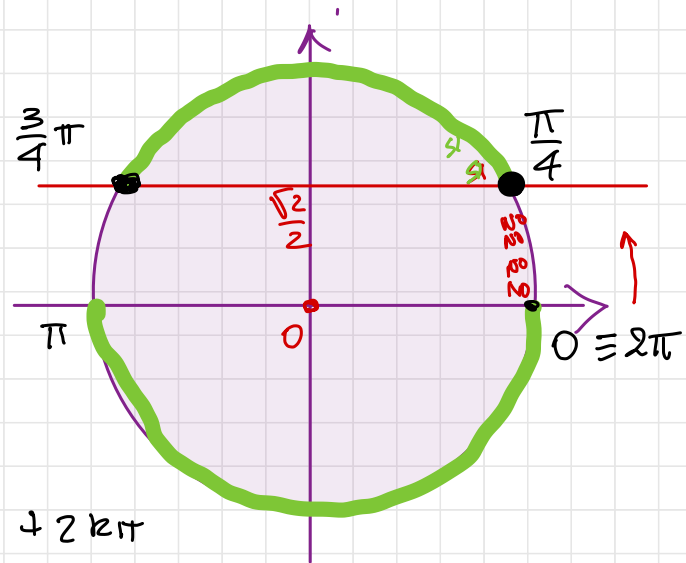
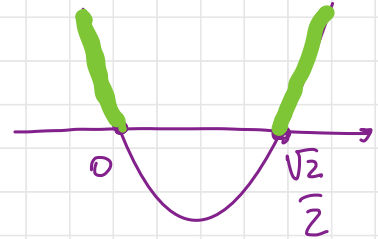
$$t = \sin x$$

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

$$t(\sqrt{2}t - 1) = 0 \quad t_1 = 0 \quad t_2 = \frac{\sqrt{2}}{2}$$

$$t \leq 0 \quad \vee \quad t \geq \frac{\sqrt{2}}{2}$$

$$\sin x \leq 0 \quad \vee \quad \sin x \geq \frac{\sqrt{2}}{2}$$



$$2k\pi + \frac{\pi}{4} \leq x \leq \frac{3\pi}{4} + 2k\pi \quad \vee \quad 2k\pi + \pi \leq x \leq 2\pi + 2k\pi$$

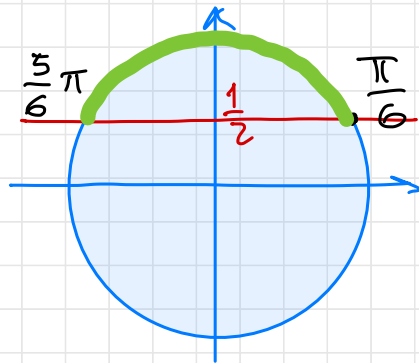
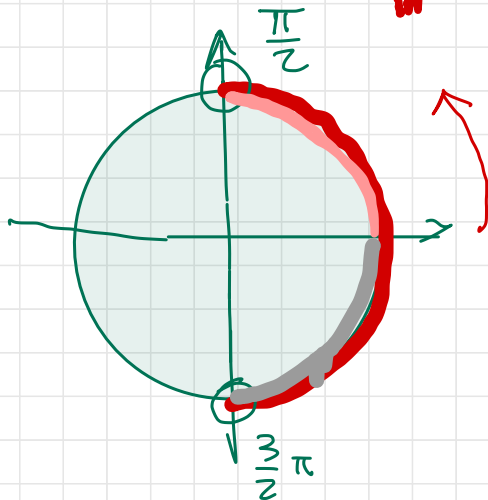
FRATTA 0 PRODOTTO

$$\frac{2 \sin x - 1}{2 \cos x} \geq 0$$

$$N \geq 0$$

$$2 \sin x - 1 \geq 0$$

$$2 \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{2}$$



$$\frac{\pi}{6} \leq x \leq \frac{5\pi}{6}$$

$$D > 0$$

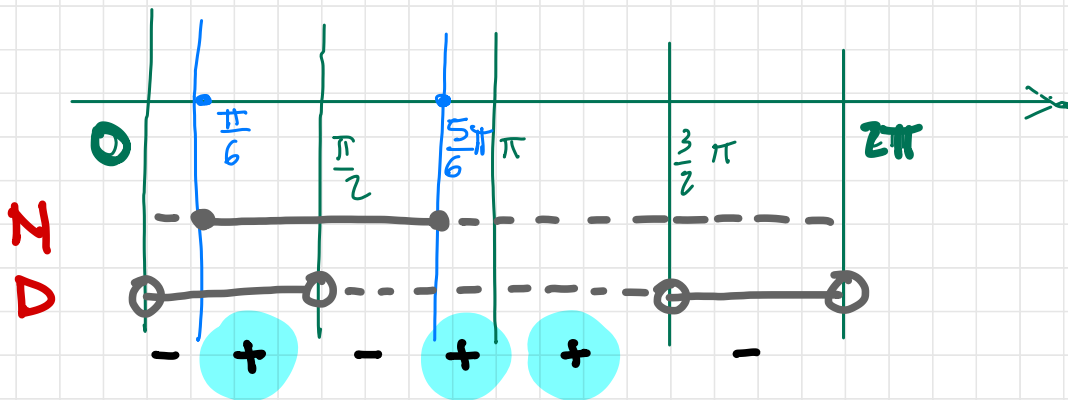
$$2 \cos x > 0$$

$$0 < x < \frac{\pi}{2}$$

∨

$$\frac{3}{2}\pi < x < 2\pi$$

QUATTRO
QUADRANTI
IN $[0; 2\pi]$



$$2k\pi + \frac{\pi}{6} \leq x < \frac{\pi}{2} + 2k\pi \quad \vee \quad \frac{5\pi}{6} + 2k\pi \leq x < \frac{3\pi}{2} + 2k\pi$$