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$$\frac{\sin x\,(2-\cos x)}{\tan x} \leq 1$$

$\tan x \neq 0$ e $\cos x \neq 0$

$\tan x \neq 0 \rightarrow x \neq k\pi$; $\cos x \neq 0 \rightarrow x \neq \frac{\pi}{2} + k\pi$

$$\frac{\sin x\,(2-\cos x) - \tan x}{\tan x} \leq 0$$

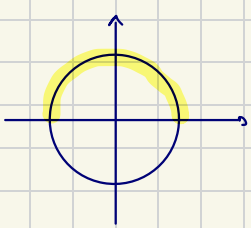
Voglio una cosa più carina

$$\frac{\sin x\,(2-\cos x) - \frac{\sin x}{\cos x}}{\frac{\sin x}{\cos x}} \leq 0$$

$$\frac{\cos x\left[\sin x\,(2-\cos x) - \frac{\sin x}{\cos x}\right]}{\sin x} \leq 0$$

$$\frac{\cos x \sin x\,(2-\cos x) - \sin x}{\sin x} \leq 0$$

$$\frac{\sin x\left[\cos x\,(2-\cos x) - 1\right]}{\sin x} \leq 0$$



$N_1 \geq 0$ $\quad \sin x \geq 0 \quad 0 + 2k\pi \leq x \leq \pi + 2k\pi$

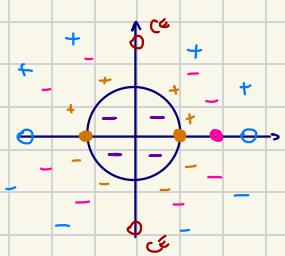
$N_2 \geq 0$ $\quad 2\cos x - \cos^2 x - 1 \geq 0$

$\cos^2 x - 2\cos x + 1 \leq 0 \quad \cos x = t$

$(t^2 - 2t + 1) \leq 0$

$(\cos x - 1)^2 \leq 0 \rightsquigarrow \cos x = 1 \rightsquigarrow$ Mai tranne per $x = 2k\pi$

$D_1 > 0 \quad \sin x > 0 \quad 2k\pi < x < \pi + 2k\pi$



Soluzione: $\forall x \in \mathbb{R}$ tranne $x = k \cdot \frac{\pi}{2}$

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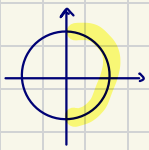
$$\frac{\cos^2 x - \sin^2 x}{\sqrt{3}\tan x + 1} \leq 0 \qquad \frac{\cos 2x}{\sqrt{3}\tan x + 1} \leq 0$$

$N \geq 0$ $\quad \cos \overbrace{2x}^{\alpha} \geq 0$

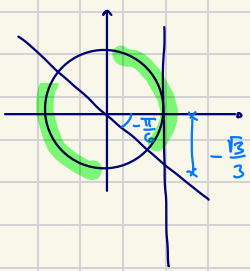


$$-\frac{\pi}{2} + 2k\pi \leq 2x \leq \frac{\pi}{2} + 2k\pi$$

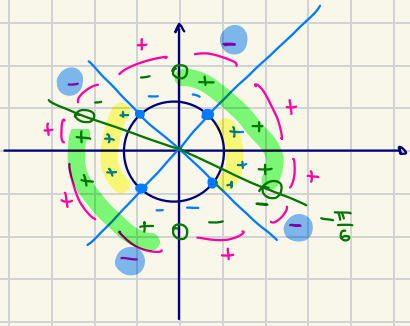
$$-\frac{\pi}{4} + k\pi \leq x \leq \frac{\pi}{4} + k\pi$$

$D > 0$ $\quad \sqrt{3}\tan x + 1 > 0$

$$\tan x > -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$$



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



$N \geq 0$

$D > 0$

$$\frac{\pi}{4} + k\pi \leq x < \frac{\pi}{2} + k\pi$$

$$\vee$$

$$\frac{3}{4}\pi + k\pi \leq x < \frac{5}{6}\pi + k\pi$$