

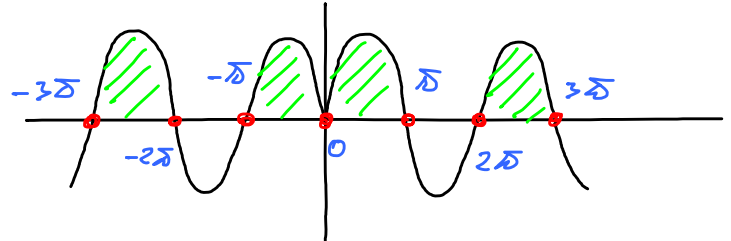
$$\log(2, \sin|x|) + 2 > |\log(2, \cos x)|$$

$$\log_2 \sin|x| + 2 > |\log_2 \cos x|$$

1) STUDIAMO I VARI "PEZZI"

$\log_2 \sin|x|$ PER ESISTENZA $\sin|x| > 0 \leadsto$

$$\leadsto \begin{cases} \sin x > 0 & x > 0 \\ \sin(-x) > 0 & x < 0 \end{cases}$$



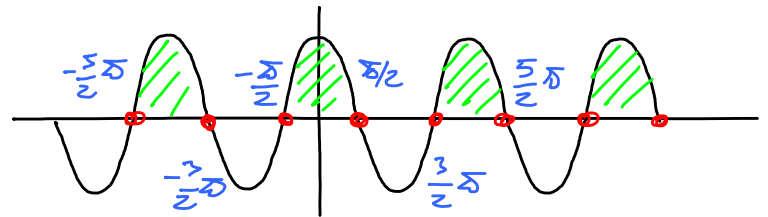
$$\leadsto \begin{cases} 2m\pi < x < (2m+1)\pi & x > 0 \\ -(2m+1)\pi < x < -2m\pi & x < 0 \end{cases} \quad \forall m \in \mathbb{N} \cup \{0\}$$

$$\leadsto -\infty < \log_2 \sin|x| \leq 0$$

$|\log_2 \cos x|$ PER ESISTENZA $\cos x > 0$

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

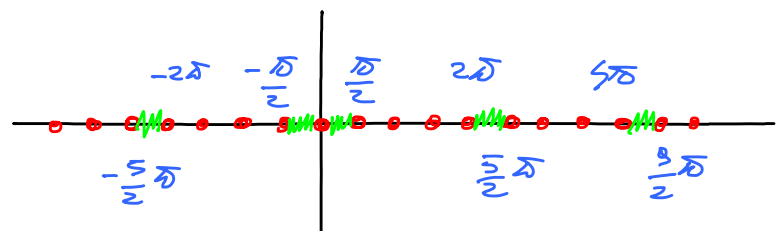
$$\forall k \in \mathbb{Z}$$



$$\leadsto -\infty < \log_2 \cos x \leq 0 \leadsto |\log_2 \cos x| = -\log_2 \cos x$$

2) DOMINIO DI ESISTENZA

$$\begin{cases} x > 0 & 2m\pi < x < \frac{\pi}{2} + 2m\pi \\ x < 0 & -\frac{\pi}{2} - 2m\pi < x < -2m\pi \end{cases}$$



$$\forall m \in \mathbb{N} \cup \{0\}$$

3) DISTINGUIAMO DUE CASI

$x > 0$ $\log_2 \sin x + 2 > -\log_2 \cos x$

$$\log_2 \sin x \cdot \cos x > -2 = \log_2 \frac{1}{4}$$

$$\frac{1}{2} \sin 2x > \frac{1}{4} \quad \sin 2x > \frac{1}{2}$$

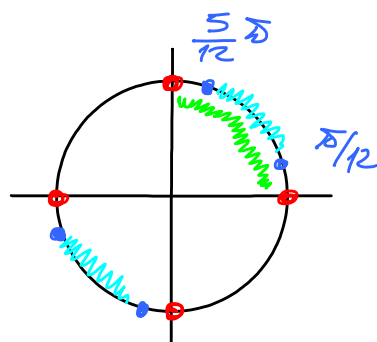
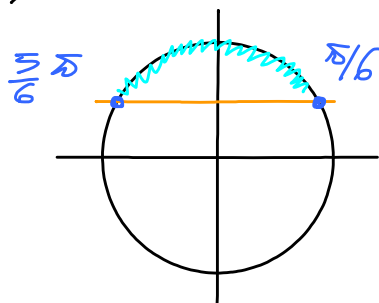
$$\frac{\pi}{6} + 2m\pi < 2x < \frac{5\pi}{6} + 2m\pi$$

$$\frac{\pi}{12} + m\pi < x < \frac{5\pi}{12} + m\pi$$

$$\forall m \in \mathbb{N} \cup \{0\}$$

SOLUZIONI AMMISSIBILI

$$\leadsto \frac{\pi}{12} + 2m\pi < x < \frac{5\pi}{12} + 2m\pi \quad \forall m \in \mathbb{N} \cup \{0\}$$



$x < 0$

$$\log_2 \sin(x) + 2 > -\log_2 \cos x$$

$$-\frac{1}{2} \sin 2x > \frac{1}{4} \quad \sin 2x < -\frac{1}{2}$$

$$-\frac{5\pi}{6} - 2m\pi < 2x < -\frac{\pi}{6} - 2m\pi$$

$$-\frac{5\pi}{12} - m\pi < x < -\frac{\pi}{12} - m\pi$$

SOLUZIONI AMMISSIBILI

$$\leadsto -\frac{5\pi}{12} - 2m\pi < x < -\frac{\pi}{12} - 2m\pi$$

$$\forall m \in \mathbb{N} \cup \{0\}$$

