$$\sqrt{1+\frac{\operatorname{sen}x}{2}} > \cos x$$

$1+\frac{\operatorname{sen}x}{2} \geq 0$ ma $-\frac{1}{2} \leq \frac{\operatorname{sen}x}{2} \leq \frac{1}{2}$ quindi ok

$1+\frac{\operatorname{sen}x}{2} > 1/2 \geq 0$

$$\cos x < 0 \quad \vee \quad \begin{cases} \cos x \geq 0 \\ 1+\frac{\operatorname{sen}x}{2} > \cos^2 x \end{cases}$$

$\cos x < 0$ per $-\pi/2 + 2k\pi < x < \pi/2 + 2k\pi \quad k \in \mathbb{Z}$

per risolvere $1+\frac{\operatorname{sen}x}{2} > \cos^2 x$ si osservi che $\cos^2 x = 1 - \operatorname{sen}^2 x$

Si risolve $\begin{cases} \operatorname{sen}^2 x + \frac{\operatorname{sen}x}{2} > 0 \\ \cos x \geq 0 \end{cases}$ $\operatorname{sen}x\left(\operatorname{sen}x + \frac{1}{2}\right) > 0$

...

Soluzione

$2k\pi < x < \frac{11}{6}\pi + 2k\pi$

$k \in \mathbb{Z}$