

- Determinare le soluzioni di $\sin 2x + \sqrt{2} \cos x > 0$ limitatamente all'intervallo $[0, 2\pi)$

$$\sin 2x = 2 \sin x \cos x \Rightarrow \sin 2x + \sqrt{2} \cos x > 0$$

ha le stesse soluzioni di

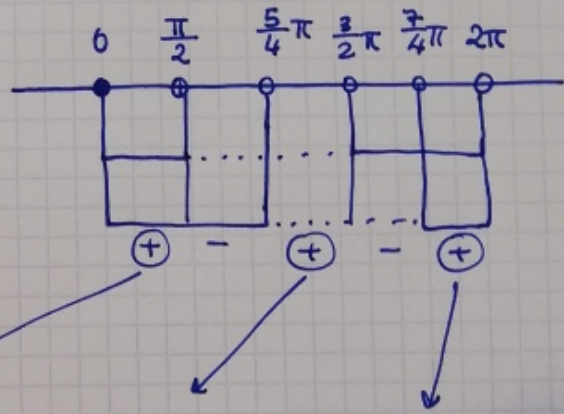
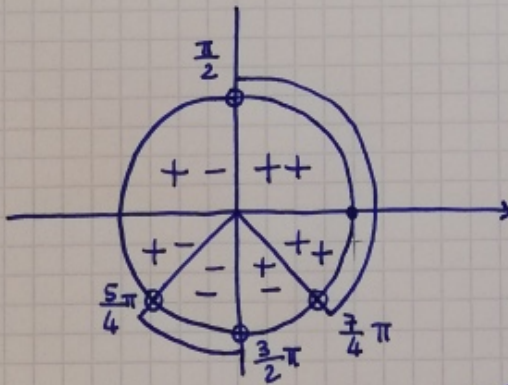
$$2 \sin x \cos x + \sqrt{2} \cos x > 0$$

↓

$$(\cos x)(2 \sin x + \sqrt{2}) > 0$$

$$\cos x > 0 \Leftrightarrow x \in \left[0, \frac{\pi}{2}\right) \cup \left(\frac{3}{2}\pi, 2\pi\right)$$

$$2 \sin x + \sqrt{2} > 0 \Leftrightarrow \sin x > -\frac{\sqrt{2}}{2} \Leftrightarrow x \in \left[0, \frac{5}{4}\pi\right) \cup \left(\frac{7}{4}\pi, 2\pi\right)$$



Soluzione : $x \in \left[0, \frac{\pi}{2}\right) \cup \left(\frac{5}{4}\pi, \frac{3}{2}\pi\right) \cup \left(\frac{7}{4}\pi, 2\pi\right)$.