

FC 2 exo 1.2)

On pose $r = \sqrt{1^2 + 1^2} = \sqrt{2}$ et on cherche φ tq

$$\begin{cases} \cos(\varphi) = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \\ \sin(\varphi) = \frac{-1}{\sqrt{2}} = -\frac{\sqrt{2}}{2} \end{cases}$$

~~donc~~ $\varphi = -\frac{\pi}{4}$ convient
par exemple

Des lors,

$$\cos(x) + \sin(x) = 1$$

$$\Leftrightarrow \sqrt{2} \cos\left(x - \frac{\pi}{4}\right) = 1$$

$$\Leftrightarrow \cos\left(x - \frac{\pi}{4}\right) = \frac{1}{\sqrt{2}} = \cos\left(\frac{\pi}{4}\right)$$

$$\Leftrightarrow \exists k \in \mathbb{Z} : x - \frac{\pi}{4} = \frac{\pi}{4} + 2k\pi$$

$$\text{ou } x - \frac{\pi}{4} = -\frac{\pi}{4} + 2k\pi$$

$$S = \left\{ \frac{\pi}{2} + 2k\pi, 2k\pi, k \in \mathbb{Z} \right\}$$