

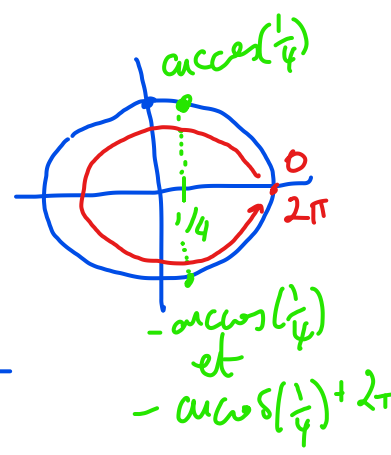
TD 2 : exo 4

2) Pour  $x \in \mathbb{R}$ ,

$$\cos(x) = \frac{1}{4} \iff \cos(x) = \cos(\arccos(\frac{1}{4}))$$

$$\iff \exists k \in \mathbb{Z} : x = \arccos(\frac{1}{4}) + 2k\pi$$

$$\text{ou } x = -\arccos(\frac{1}{4}) + 2k\pi$$



$$S = \{ \arccos(\frac{1}{4}) + 2k\pi, -\arccos(\frac{1}{4}) + 2k\pi, k \in \mathbb{Z} \}$$

$$S \cap [0, 2\pi[ = \{ \arccos(\frac{1}{4}), -\arccos(\frac{1}{4}) + 2\pi \}$$

5) Pour  $x \in \mathbb{R} \setminus \{ \frac{\pi}{2} + k\pi, k \in \mathbb{Z} \}$

$$\tan(x)^2 + 5\tan(x) = 0 \iff \tan(x)(\tan(x) + 5) = 0$$

$$\iff \tan(x) = 0 \text{ ou } \tan(x) + 5 = 0$$

$$\iff \tan(x) = 0 \text{ ou } \tan(x) = -5$$

$$\iff \tan(x) = \tan(0) \text{ ou } \tan(x) = \tan(\arctan(-5))$$

$$\iff \exists k \in \mathbb{Z} : x = 0 + k\pi \text{ ou } x = \arctan(-5) + k\pi$$

$$S = \{ \underline{k\pi}, \underline{\arctan(-5) + k\pi}, k \in \mathbb{Z} \}$$

$y^2 + 5y = 0$   
 $\hookrightarrow$  pas de  $\Delta$

$$\tan(x)^2 = (\tan(x))^2$$

$$= \tan^2(x)$$

$$\neq \tan(x^2)$$

$$S \cap [0, 2\pi[ = \{ \underline{0}, \underline{\pi}, \underline{\arctan(-5) + 2\pi}, \underline{\arctan(-5) + \pi} \}$$

