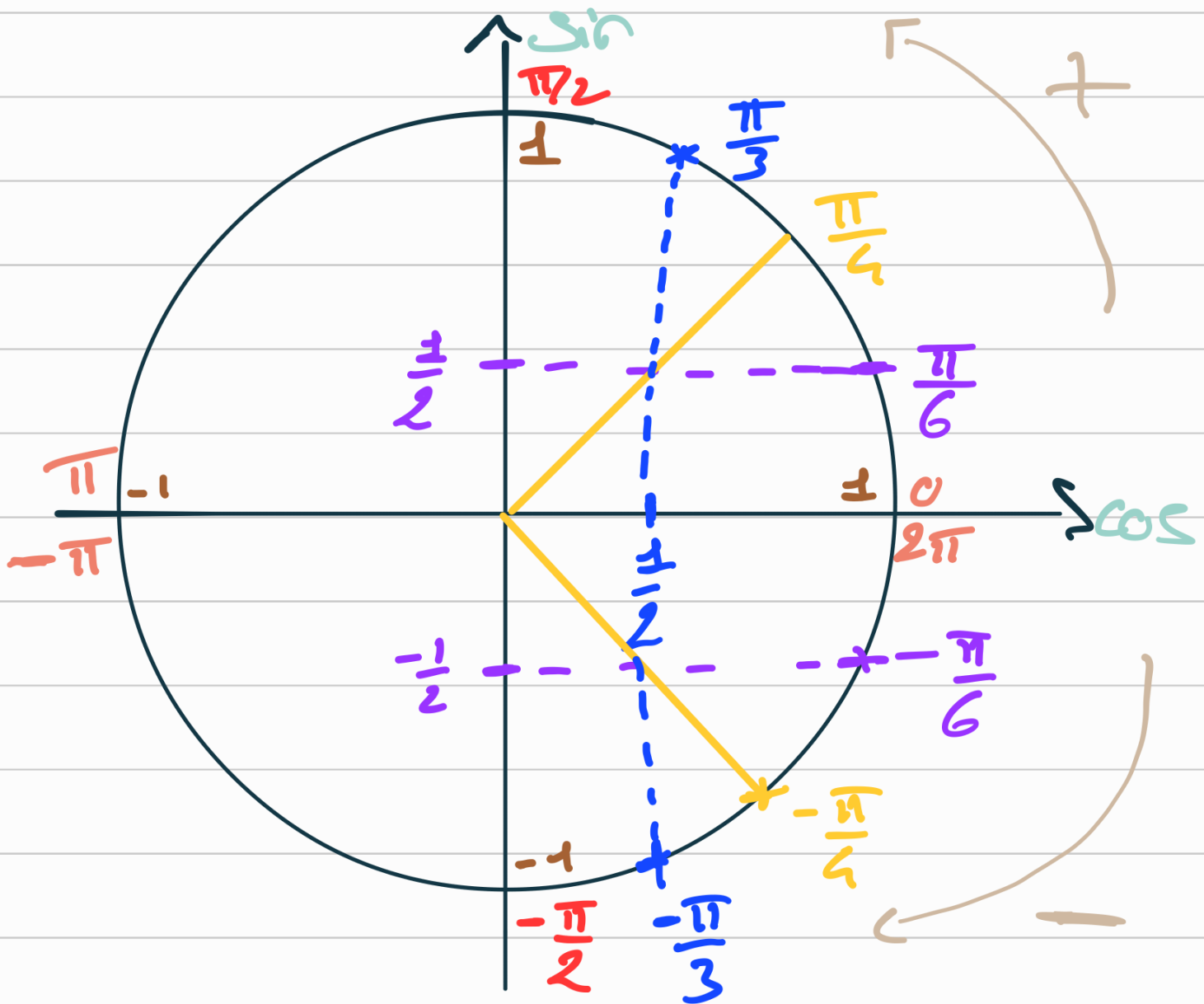


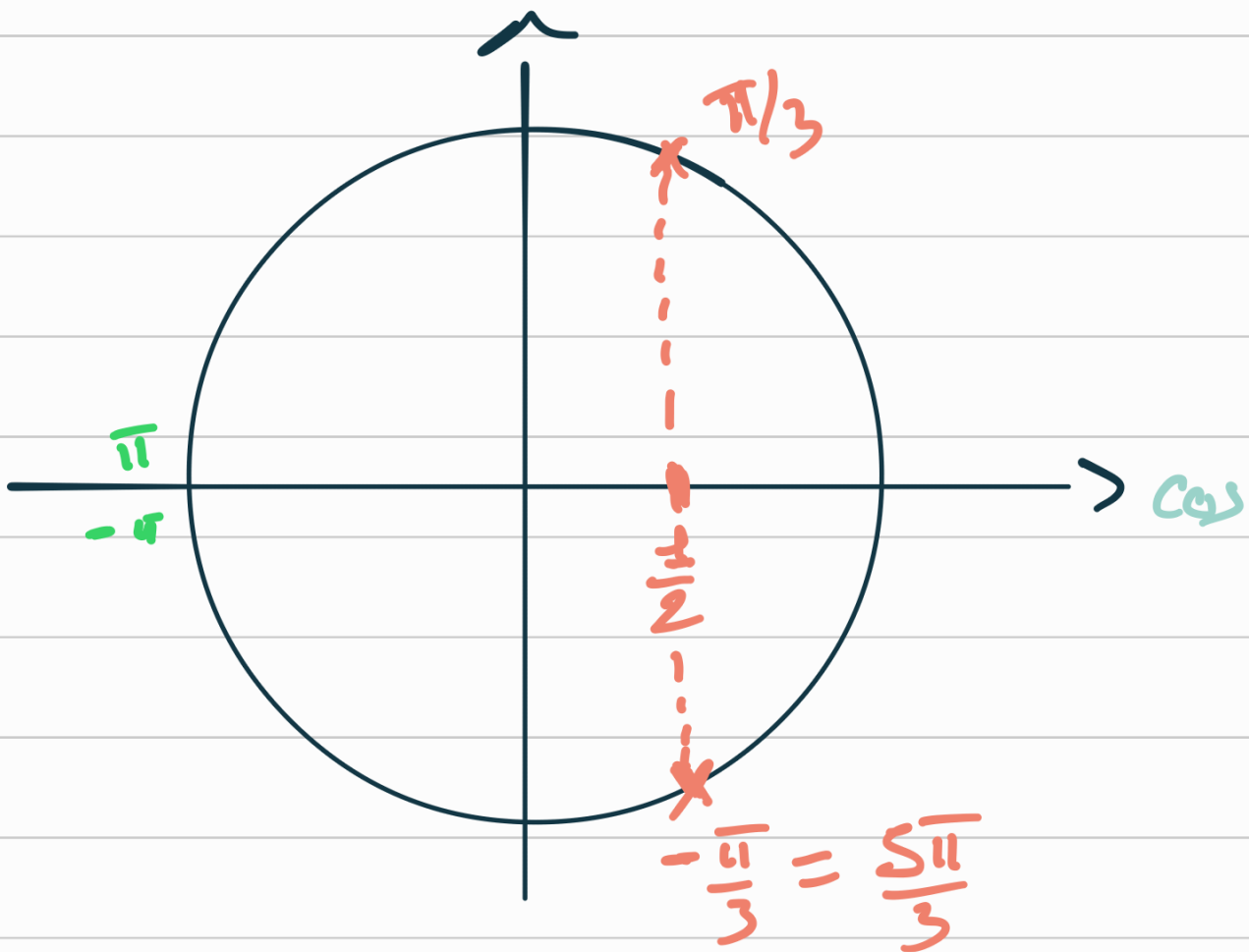
Trigonométrie



x	0 2π	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	π
$\cos(x)$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	-1
$\sin(x)$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	0

• Résolution d'équations

$$\cos(x) = \frac{1}{2}$$



$$\textcircled{1} \quad x \in]-\pi; \pi]$$

$$\text{e, } \Delta = \left\{ -\frac{\pi}{3}; \frac{\pi}{3} \right\}$$

$$\textcircled{2} \quad x \in [0; 2\pi[.$$

$$\mathcal{G} = \left\{ \frac{\pi}{3}; \frac{5\pi}{3} \right\}$$

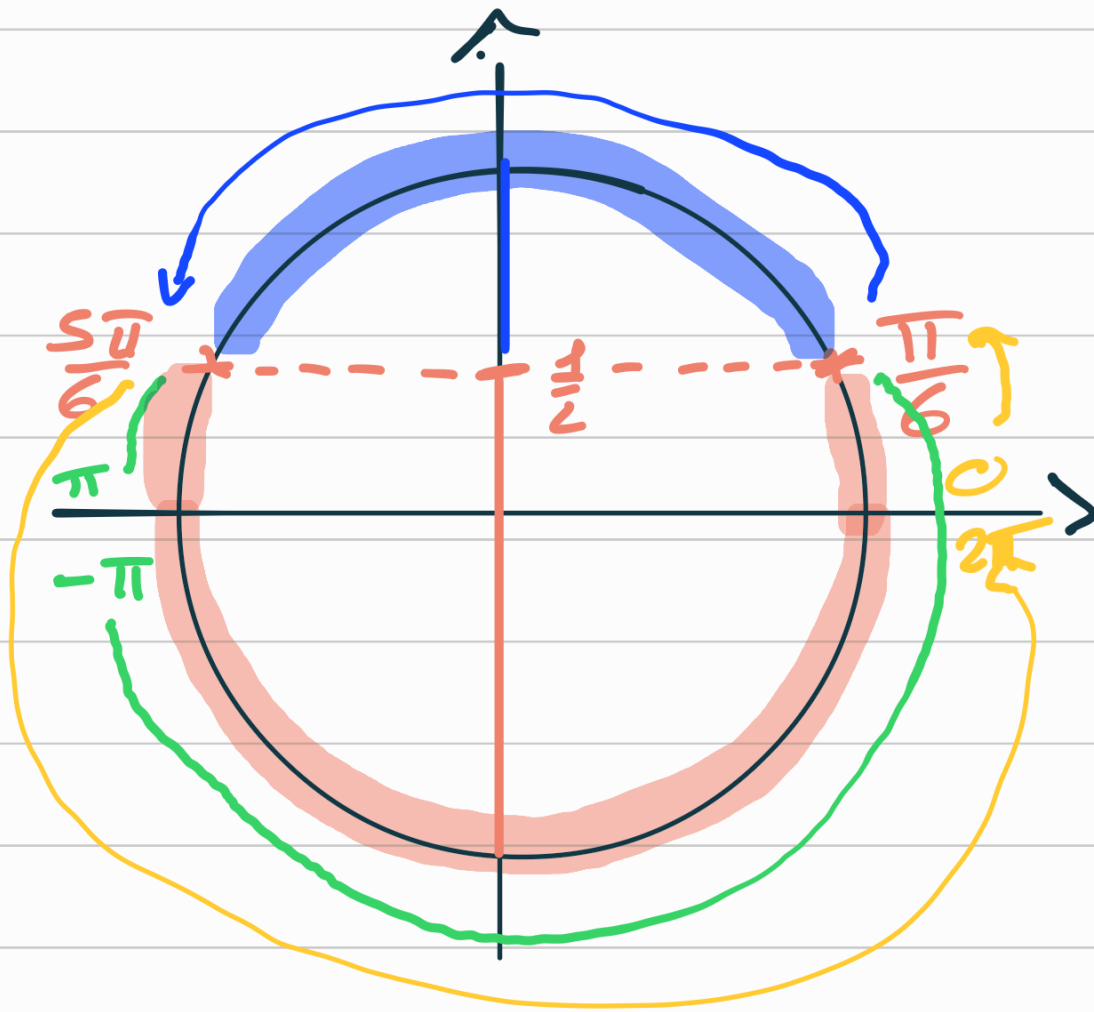
$$\textcircled{3} \quad x \in \mathbb{R}$$

$$\mathcal{G} = \left\{ \frac{\pi}{3} + 2k\pi ; \frac{-\pi}{3} + 2k\pi \right\}$$

avec $k \in \mathbb{Z}$.

• Résolution d'inéquations

$$\sin(x) \leq \frac{1}{2}$$



$$\textcircled{1} \quad x \in]-\pi; \pi]$$

$$S =]-\pi; \frac{\pi}{6}] \cup \left[\frac{5\pi}{6}; \pi\right]$$

$$\textcircled{2} \quad x \in [0; 2\pi[$$

$$\mathcal{S} = \left[0; \frac{\pi}{6}\right] \cup \left[\frac{5\pi}{6}; 2\pi\right[$$

$$\sin(x) > \frac{1}{2}$$

$$x \in [0; 2\pi[$$

$$\hookrightarrow \mathcal{S} = \left]\frac{\pi}{6}; \frac{5\pi}{6}\right[$$

Fonctions trigonométriques

- cosinus

$$\mathcal{D} = \mathbb{R}$$

$$\forall x \in \mathbb{R}, -1 \leq \cos(x) \leq 1$$

$$\cos \text{ paire} \Rightarrow \cos(-x) = \cos(x)$$

$$\cos'(x) = -\sin(x)$$

$\cos$ 2π - périodique

$$\hookrightarrow \cos(x + 2\pi) = \cos(x)$$

• Sinus

$$\mathcal{D} = \mathbb{R}$$

$$\forall x \in \mathbb{R}, -1 \leq \sin(x) \leq 1$$

$$\sin \text{ impaire} \Rightarrow \sin(-x) = -\sin(x)$$

$$\sin'(x) = \cos(x)$$

$\sin$ 2π -périodique

$$\hookrightarrow \sin(x + 2\pi) = \sin(x).$$