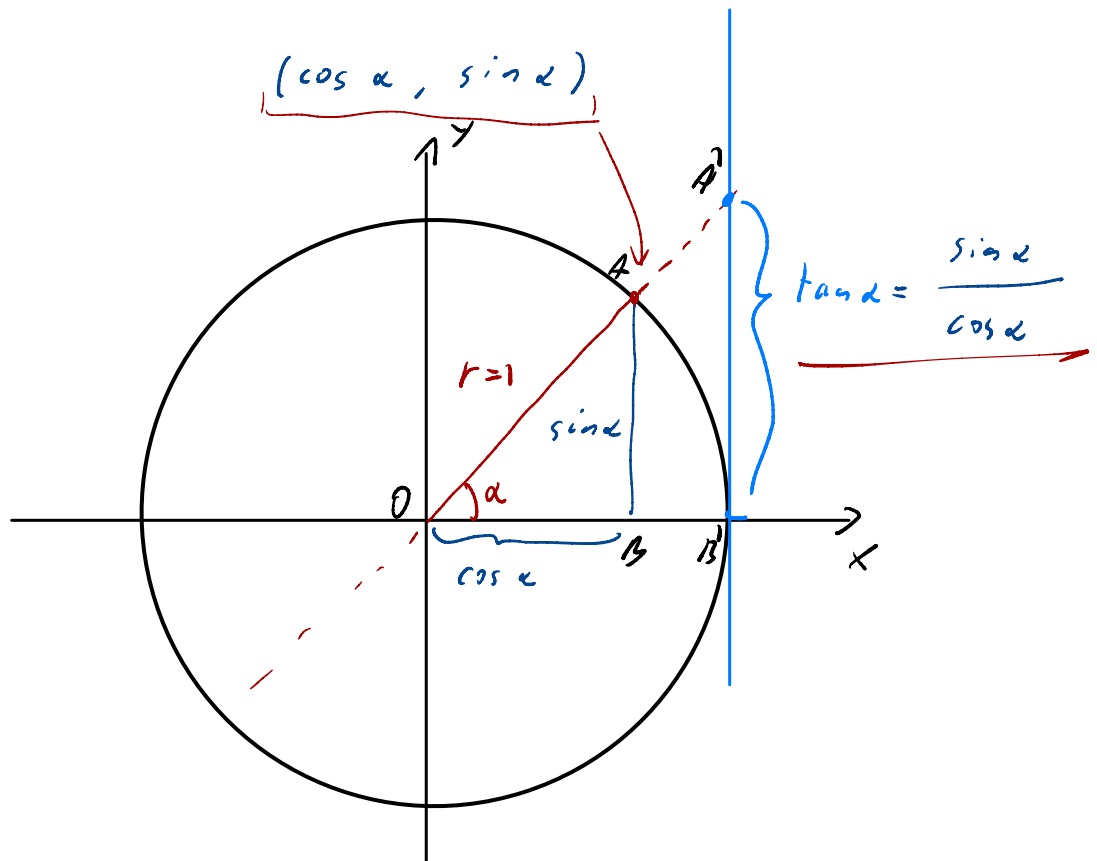
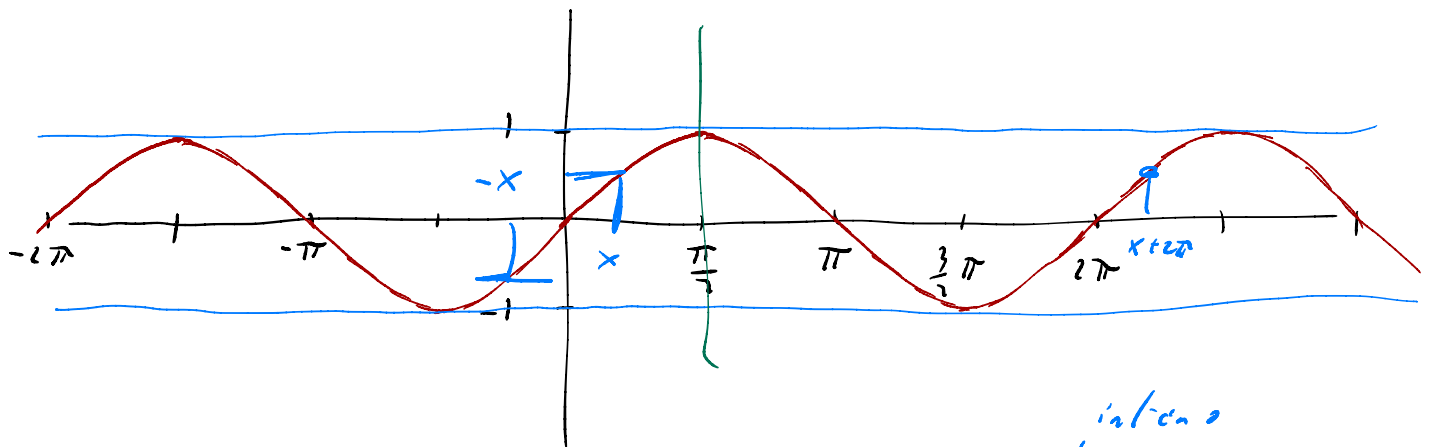


Funzioni trigonometriche



$$(\sin \alpha)^2 + (\cos \alpha)^2 = 1$$

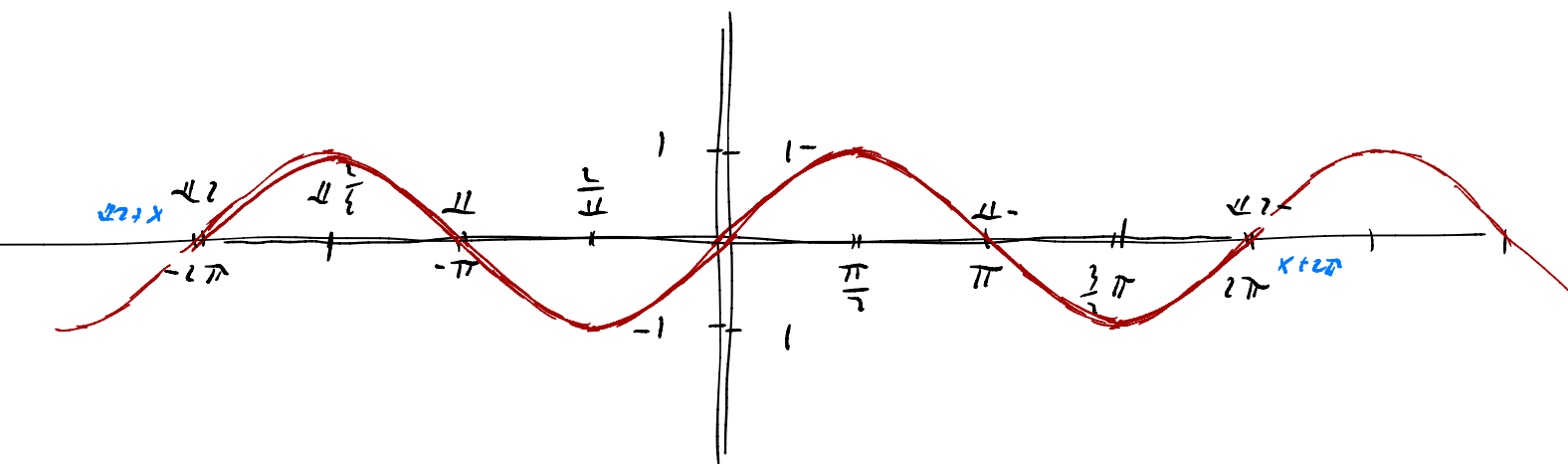
La funzione seno



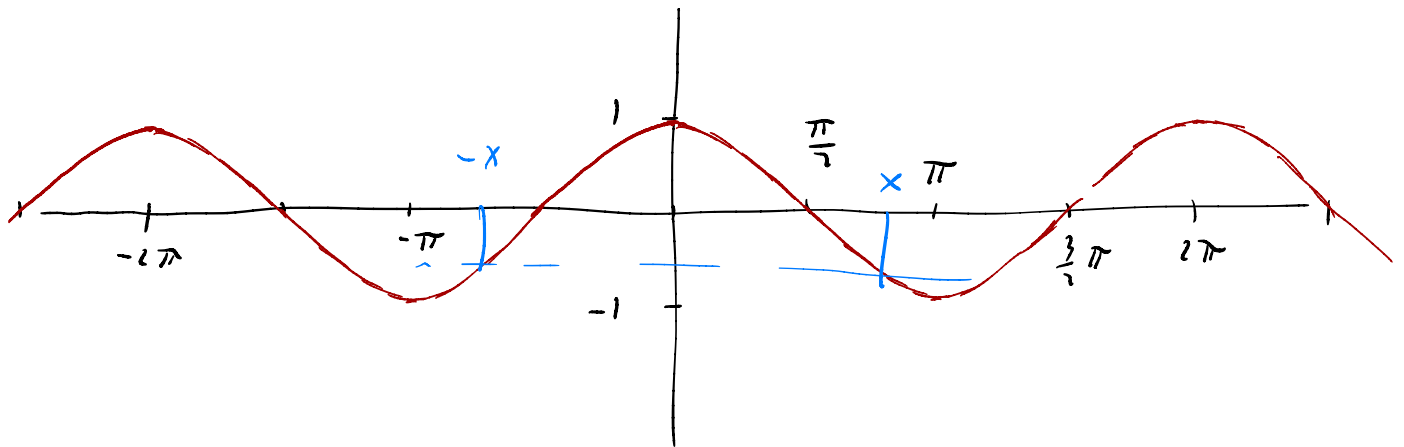
$$\sin(x) = \sin(x + 2\pi) = \sin(x + 2k\pi) \quad \text{inter-ness}$$

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

$$\sin(x) = -\sin(x + \pi)$$



La funzione coseno



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

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

$$\cos(x) = -\cos(x + \pi)$$

$$\sin(x \pm y) = \sin x \cos y \pm \cos x \sin y$$

$$\cos(x \pm y) = \cos x \cos y \mp \sin x \sin y$$

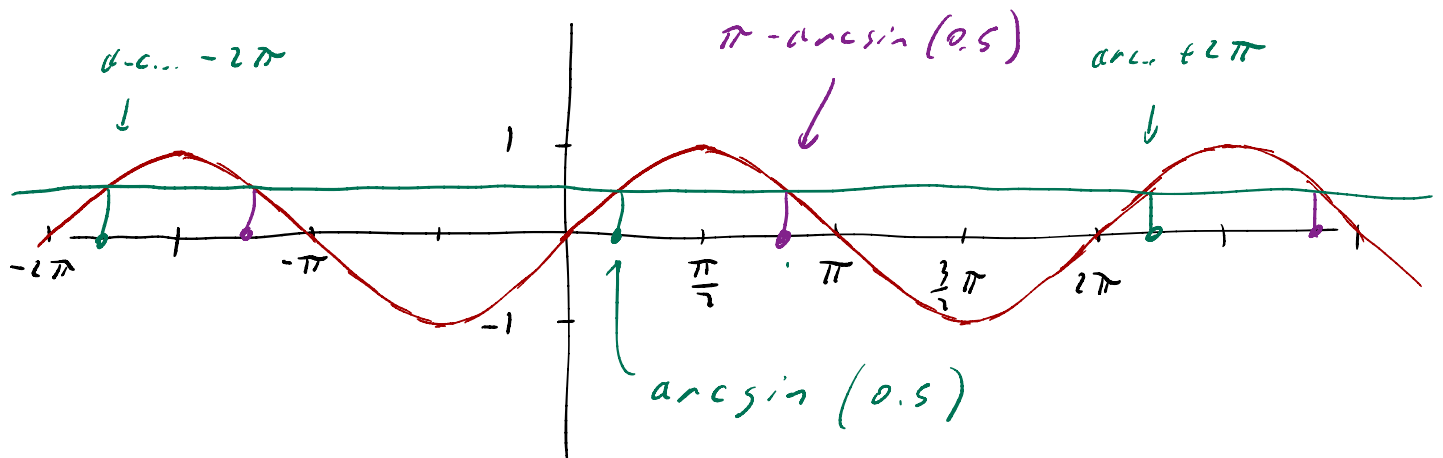
$$\sin x \cdot \cos y = \frac{\sin(x+y) + \sin(x-y)}{2}$$

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

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

$$\sin(x+y) + \sin(x-y) = 2 \sin x \cos y$$

$$\sin(x) = 0.5$$



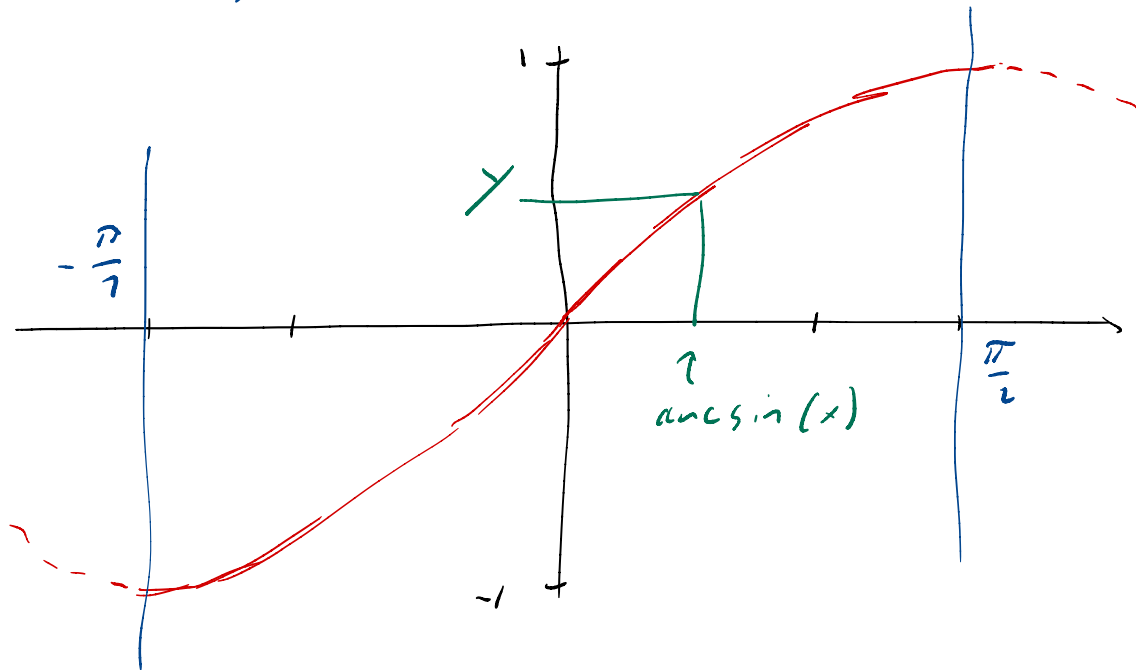
$$x = \begin{cases} \arcsin(0.5) + 2k\pi \\ \pi - \arcsin(0.5) + 2k\pi \end{cases}$$

Trovare le soluzioni di $\sin(x) = 0.5$
 contenute nell'intervallo $0 \leq x \leq 10$

$$\arcsin(0.5), \arcsin(0.5) + 2\pi$$

$$\pi - \arcsin(0.5), 3\pi - \arcsin(0.5)$$

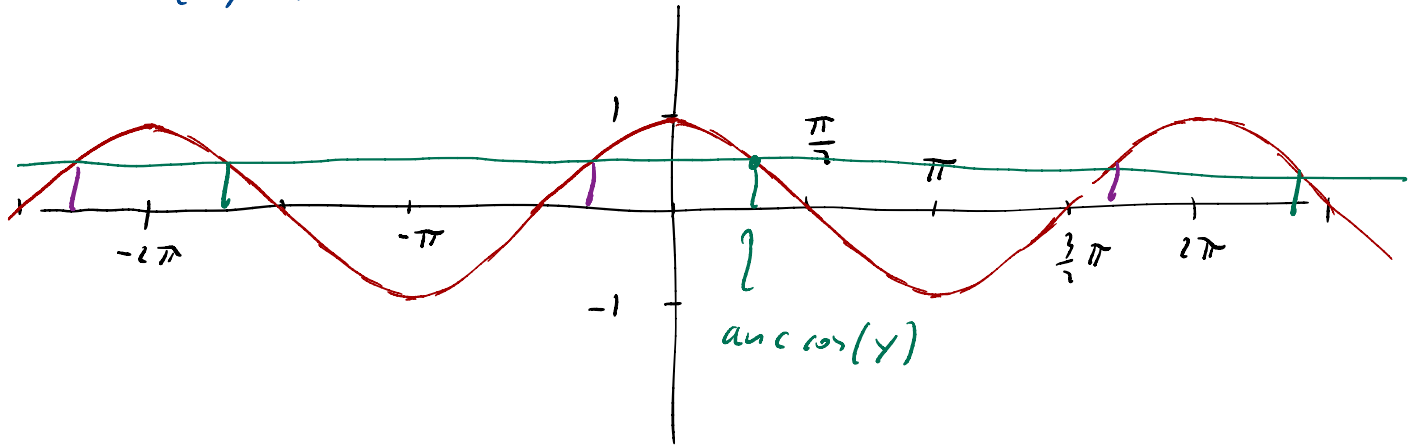
$\sin(x) = y \leftarrow \text{equation in } x$



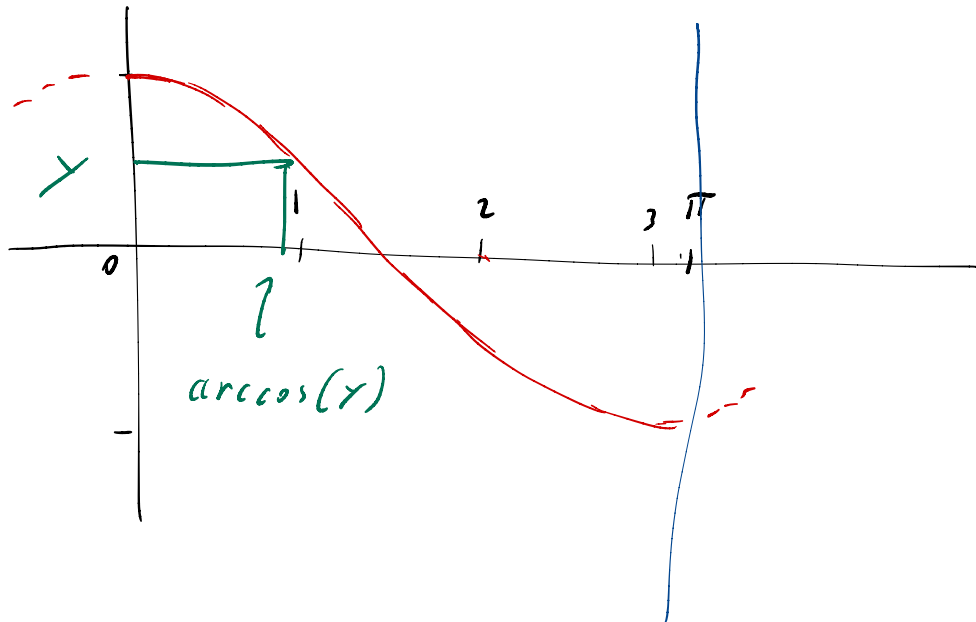
Defn $y \in [-1, 1]$

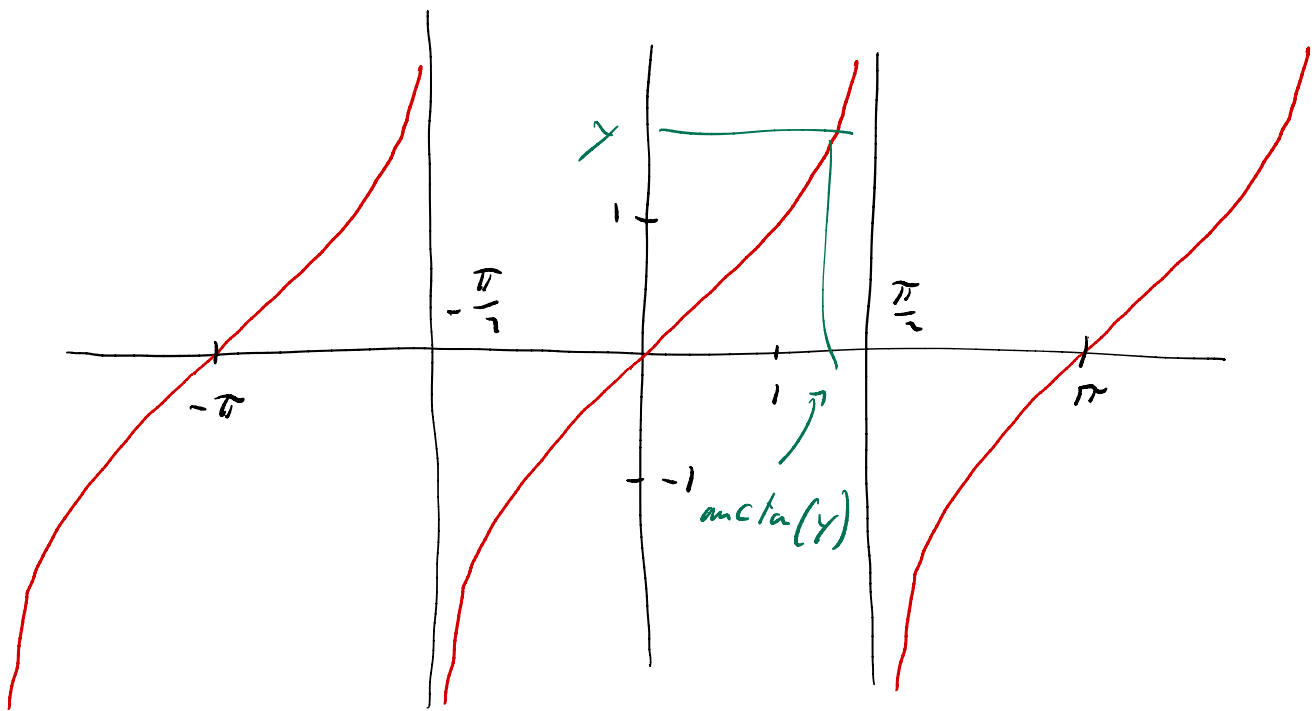
$$x = \arcsin(y) \Leftrightarrow y = \sin(x) \wedge x \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$\cos(x) = y$$



$$x = \begin{cases} \arccos(y) + 2k\pi \\ -\arccos(y) + 2k\pi \end{cases}$$





$$\tan(x) = \tan(x + \pi)$$

$$\tan(x) = -\tan(-x)$$

$$\tan(x) = y$$

$$x = \arctan(y) + k\pi$$