3/10/2018

573 $y = \arcsin \frac{2}{x+2}$ $\quad [\,]-\infty;-4] \cup [0;+\infty[\,]$

Trovare il dominio

$$-1 \leq \frac{2}{x+2} \leq 1 \implies \begin{cases} \frac{2}{x+2} \leq 1 & [1] \\ \frac{2}{x+2} \geq -1 & [2] \end{cases}$$

[1] $\frac{2}{x+2} \leq 1 \qquad \frac{2}{x+2} - 1 \leq 0 \qquad \frac{2-x-2}{x+2} \leq 0$

$-\frac{x}{x+2} \leq 0 \qquad \frac{x}{x+2} \geq 0$

N $x \geq 0$

D $x+2 > 0 \implies x > -2$

	-2		0	
N	$-$	$-$	0	$+$
D	$-$	$\nexists$	$+$	$+$
	$+$	$\nexists$	$-$	0 $+$

$x < -2 \ \vee \ x \geq 0$

[2] $\frac{2}{x+2} \geq -1 \qquad \frac{2}{x+2} + 1 \geq 0 \qquad \frac{2+x+2}{x+2} \geq 0$

$\frac{x+4}{x+2} \geq 0$

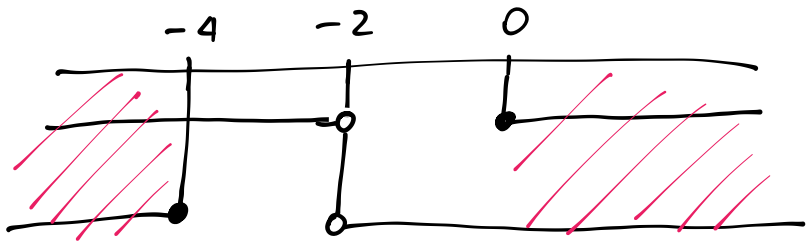
N $x+4 > 0 \implies x > -4$

D $x+2 > 0 \implies x > -2$

	-4		-2	
	$-$	0 $+$		$+$
	$-$	$-$	$\nexists$	$+$
	$+$	0 $-$	$\nexists$	$+$

$x \leq -4 \ \vee \ x > 2$

$$\begin{cases} x < -2 \ \vee \ x \geq 0 \\ x \leq -4 \ \vee \ x > -2 \end{cases}$$



$$x \leq -4 \ \vee \ x \geq 0$$

$$D = (-\infty, -4] \cup [0, +\infty)$$

577 $y = \sqrt{\arcsin(x-1)}$ $[[1;2]]$

$$\begin{cases} -1 \leq x-1 \leq 1 \\ \arcsin(x-1) \geq 0 \end{cases} \quad \begin{cases} -1 \leq x-1 \leq 1 \\ x-1 \geq 0 \end{cases} \Rightarrow \quad 0 \leq x-1 \leq 1$$

$$\Downarrow$$

$$1 \leq x \leq 2$$

$$D = [1, 2]$$

578 $y = \arctan \frac{x+1}{1-x}$ $[\mathbb{R} - \{1\}]$

$$1 - x \neq 0 \Rightarrow x \neq 1 \qquad \mathbb{R} \setminus \{1\}$$

$$D = (-\infty, 1) \cup (1, +\infty)$$

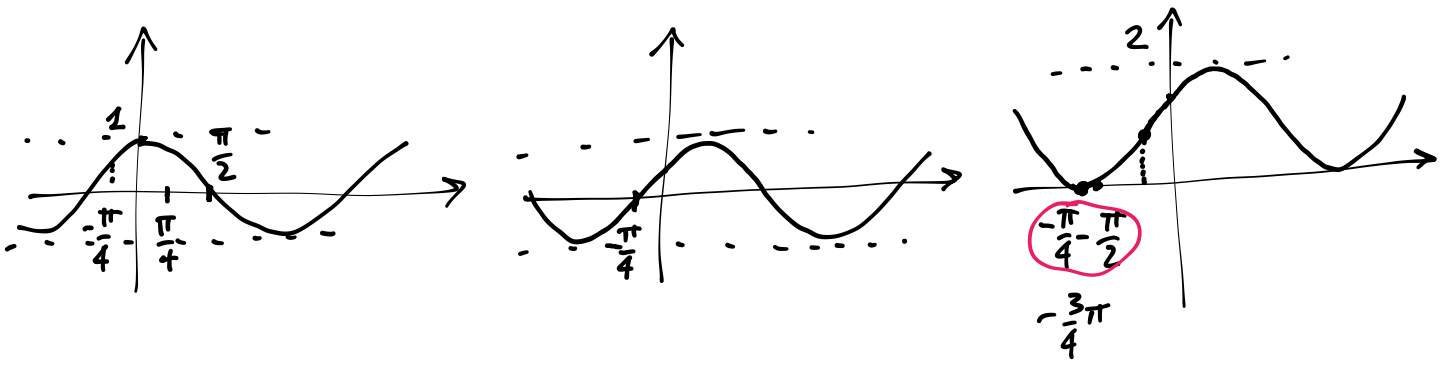
$$D =]-\infty, 1[\cup]1, +\infty[$$

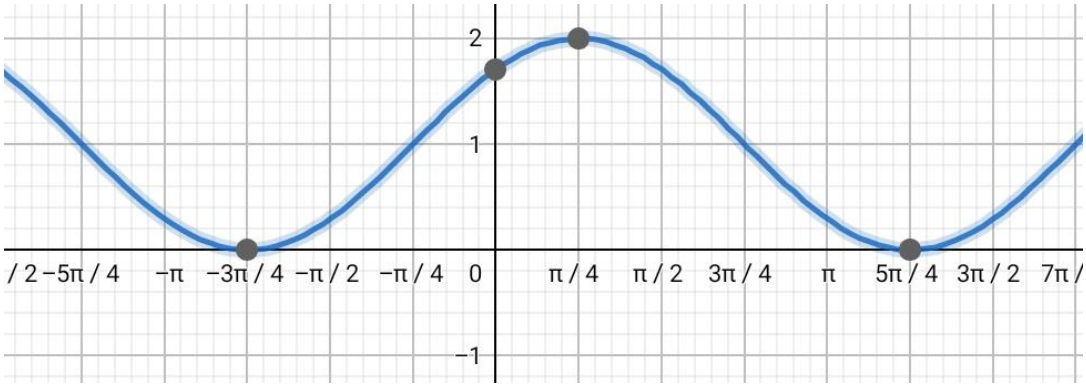
590 $y = \cos\left(x - \frac{\pi}{4}\right) + 1$ Disegnare il grafico

$\cos x \longrightarrow \cos\left(x - \frac{\pi}{4}\right) \longrightarrow \cos\left(x - \frac{\pi}{4}\right) + 1$

traslo di $\frac{\pi}{4}$ verso destra $\longrightarrow$

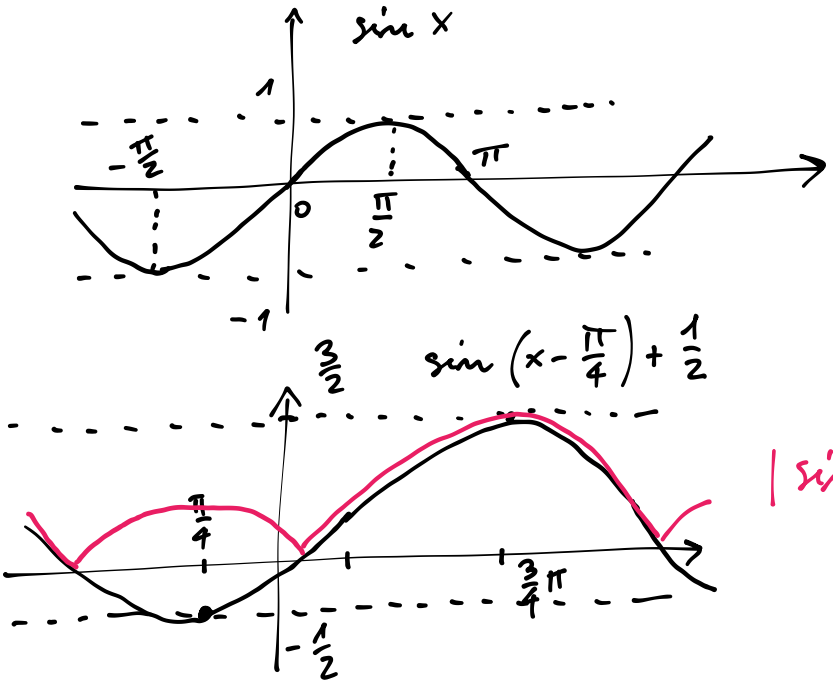
traslo di 1 verso l'alto $\uparrow$

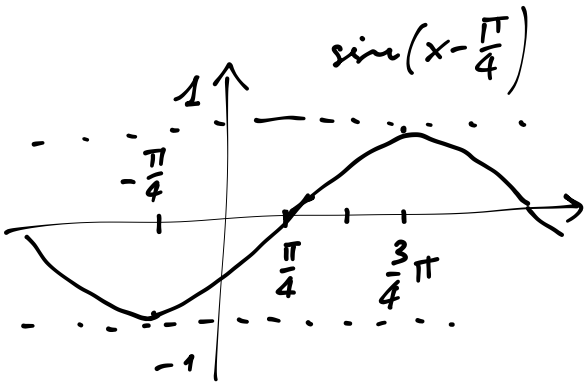




631 $y = \left| \sin\left(x - \frac{\pi}{4}\right) + \frac{1}{2} \right|$

$\sin x \longrightarrow \sin\left(x - \frac{\pi}{4}\right) \longrightarrow \sin\left(x - \frac{\pi}{4}\right) + \frac{1}{2} \rightarrow \left| \sin\left(x - \frac{\pi}{4}\right) + \frac{1}{2} \right|$





$\left| \sin\left(x - \frac{\pi}{4}\right) + \frac{1}{2} \right|$