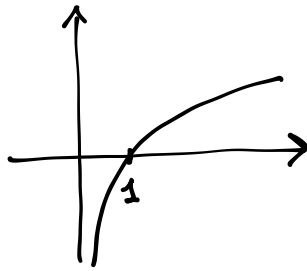


$$y = \frac{\ln(x+1)}{2^x - 1}$$

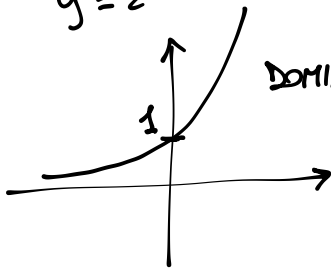
REMEMBER ...

$$y = \ln x \text{ (LOGARITMO IN BASE } e) \quad e \approx 2,71$$



DOMINIO  $D = (0, +\infty)$

$$y = 2^x$$



DOMINIO =  $\mathbb{R} = (-\infty, +\infty)$

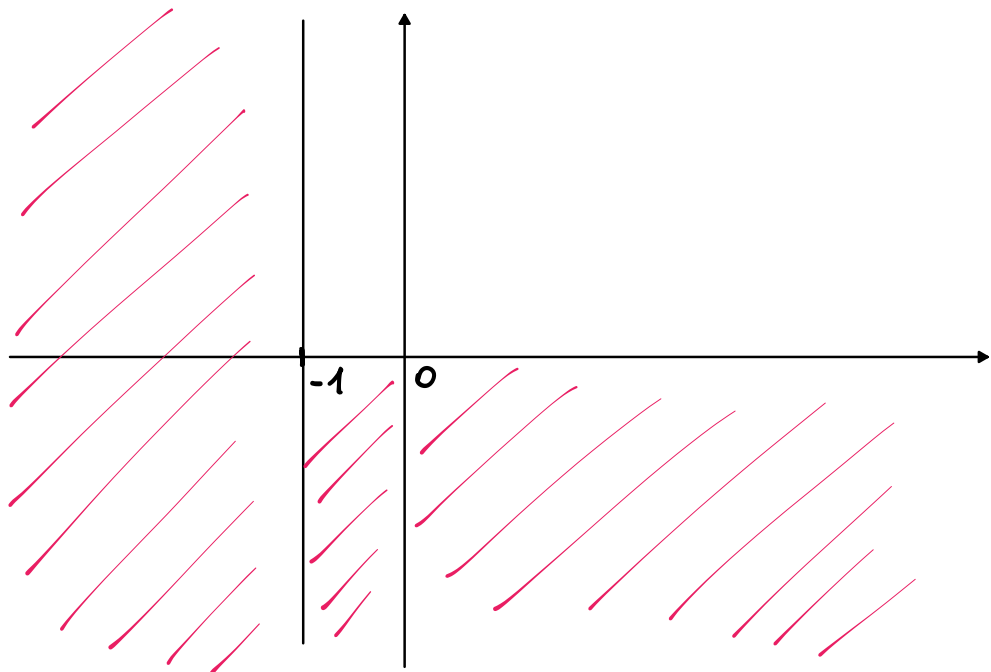
1) DOMINIO

$$\begin{cases} x+1 > 0 \\ 2^x - 1 \neq 0 \end{cases}$$

$$\begin{cases} x > -1 \\ x \neq 0 \end{cases}$$

$$D = (-1, 0) \cup (0, +\infty)$$

$$\hookrightarrow 2^x \neq 1$$



## 2) INTERSEZ. CON GLI ASSI

INT. ASSE X

$$\begin{cases} y = \frac{\ln(x+1)}{2^x - 1} \\ y = 0 \end{cases}$$

$$\frac{\ln(x+1)}{2^x - 1} = 0$$

$$\ln(x+1) = 0$$

$$x+1 = 1$$

$$x = 0 \text{ N.A.}$$

perché 0 è escluso dal dominio

INT. ASSE Y

non ci sono perché  $x = 0$  è escluso dal dominio

$\Rightarrow$  non ci sono INTERSEZIONI CON GLI ASSI

## 3) STUDIO SEGNO

$$\text{N)} \frac{\ln(x+1)}{2^x - 1} > 0$$

$$\text{N)} \ln(x+1) > 0 \Rightarrow \begin{cases} x+1 > 0 \\ x+1 > 1 \end{cases} \begin{cases} x > -1 \\ x > 0 \end{cases} \Rightarrow x > 0$$

$$\text{D)} 2^x - 1 > 0 \quad 2^x > 1 \quad 2^x > 2^0 \Rightarrow x > 0$$

