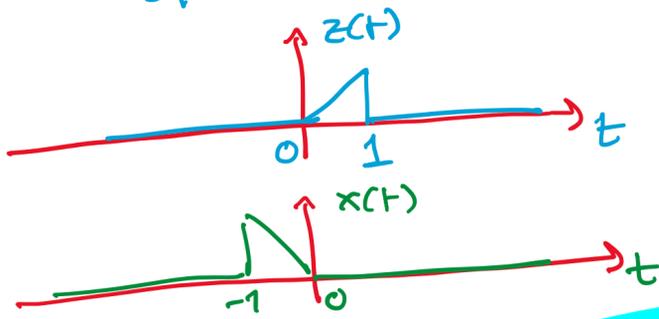**Nota**

$$e^{a-jb} = \boxed{e^a}\, e^{-jb}$$

modulo reale e positivo

ES1 SIA DATO
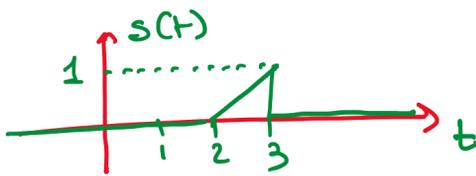
DISEGNARE $x(t) = s(-t+2)$

↑ ribaltamento   ← traslazione
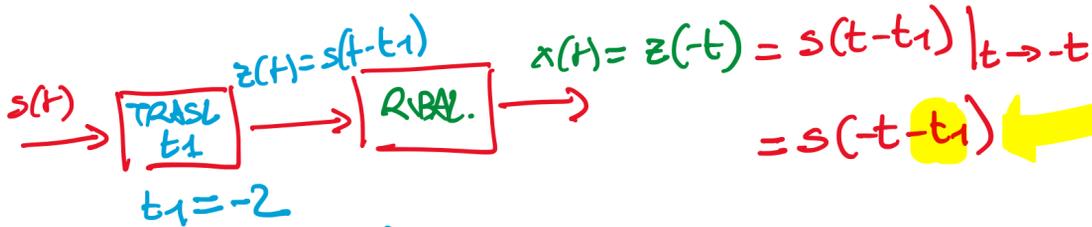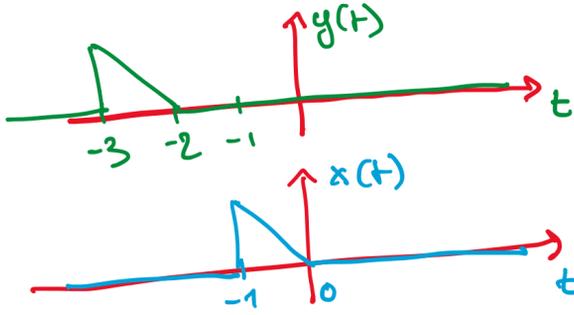
$$s(t) \rightarrow \boxed{\text{RIBAL.}} \xrightarrow{y(t)=s(-t)} \boxed{\begin{array}{c}\text{TRASL}\\ \text{to}\end{array}} \rightarrow$$
$t_0 = 2$

$$x(t) = y(t - t_0) = s(-t)\big|_{t \to t - t_0}$$
$$= s(-(t-t_0))$$
$$= s(-t + t_0)$$

$$s(t) \rightarrow \boxed{\begin{array}{c}\text{TRASL}\\ t_1\end{array}} \xrightarrow{z(t)=s(t-t_1)} \boxed{\text{RIBAL.}} \rightarrow$$
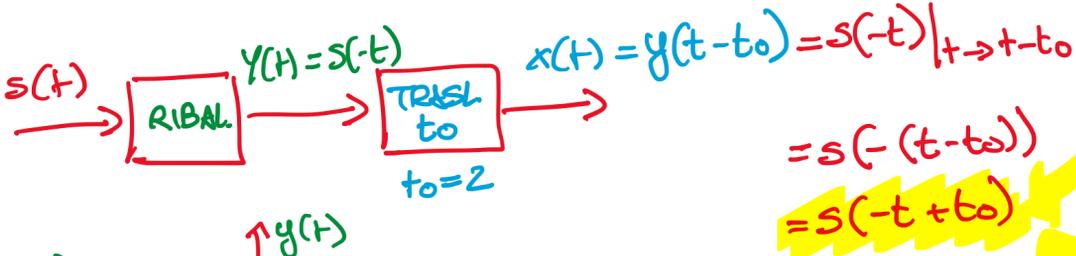$t_1 = -2$

$$x(t) = z(-t) = s(t-t_1)\big|_{t \to -t}$$
$$= s(-t - t_1)$$

NOTA $s(-2t+1) = s(-(2t-1)) = s_-(2t-1)$

SCALA ↑   TRASLAZ. ↑   RIB.

$$= s_-\left(2\left(t-\tfrac{1}{2}\right)\right)$$
$$= s_-\left(\frac{t-\tfrac{1}{2}}{\tfrac{1}{2}}\right)$$

#1 #2 #3

ES2 TROVARE PARTE PARI E DISPARI DI $s(t) = \text{rect}(t - \tfrac{1}{2})$
E DISEGNARLE
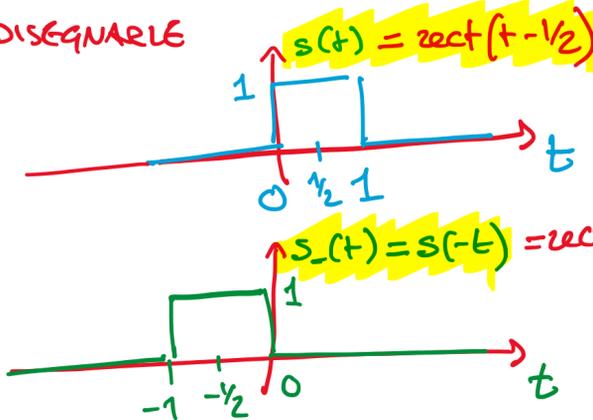
$$s_-(t) = s(-t) = \text{rect}\left(t - \left(-\tfrac{1}{2}\right)\right) = \text{rect}\left(t + \tfrac{1}{2}\right) \quad \text{DAL DISEGNO}$$
$$= \text{rect}\left(-t - \tfrac{1}{2}\right) \quad \text{DALL'EQUAZ.}$$
$$= \text{rect}\left(-(t + \tfrac{1}{2})\right) \quad \text{PARITÀ RECT}$$
$$= \text{rect}\left(t + \tfrac{1}{2}\right)$$

$$S_e(t) = \tfrac{1}{2} s(t) + \tfrac{1}{2} s(-t)$$
$$= \tfrac{1}{2}\text{rect}(t - \tfrac{1}{2}) + \tfrac{1}{2}\text{rect}(t + \tfrac{1}{2}) = \tfrac{1}{2}\,\cancel{\text{rect}\left(\frac{2t}{2}\right)}$$
$$= \tfrac{1}{2}\text{rect}\left(\tfrac{t}{2}\right)$$

$$S_o(t) = \tfrac{1}{2} s(t) - \tfrac{1}{2} s(-t)$$
$$= \tfrac{1}{2}\text{rect}(t - \tfrac{1}{2}) - \tfrac{1}{2}\text{rect}(t + \tfrac{1}{2}) = \tfrac{1}{2}\text{rect}\left(\tfrac{t}{2}\right)\cdot \text{sign}(t)$$