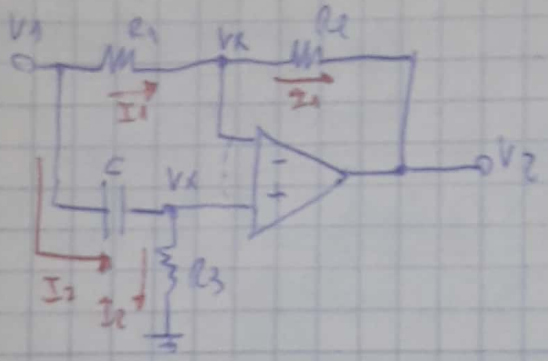
EJERCICIO 7 TP1:

a)



$\frac{R2}{R1} = 1 \qquad \frac{RA}{RB} = 5 \qquad C = 1\mu F \qquad R_3 = 1k\Omega$

$I_1 = \frac{V_1 - V_x}{R_1} = \frac{V_x - V_2}{R_2}$ ①

$I_2 = (V_1 - V_x) \cdot SC = \frac{V_x}{R_3}$ ②

② $V_1 SC - V_x SC = \frac{V_x}{R_3} \Rightarrow V_1 SC = V_x \left(\frac{1}{R_3} + SC\right) \Rightarrow V_1 SC = V_x \left(\frac{1+SCR_3}{R_3}\right)$

$\Rightarrow \boxed{V_x = V_1 \cdot \frac{SCR_3}{1+SCR_3}}$

① $(V_1 - V_x) \cdot \frac{R_2}{R_1} = V_x - V_2 \Rightarrow V_1 + V_2 = 2V_x$

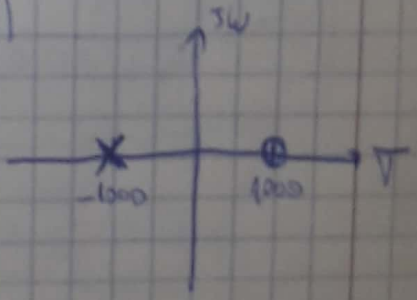
$\Rightarrow V_1 + V_2 = 2V_1 \cdot \frac{SCR_3}{1+SCR_3} \Rightarrow V_2 = V_1 \left(\frac{2SCR_3}{1+SCR_3} - 1\right)$

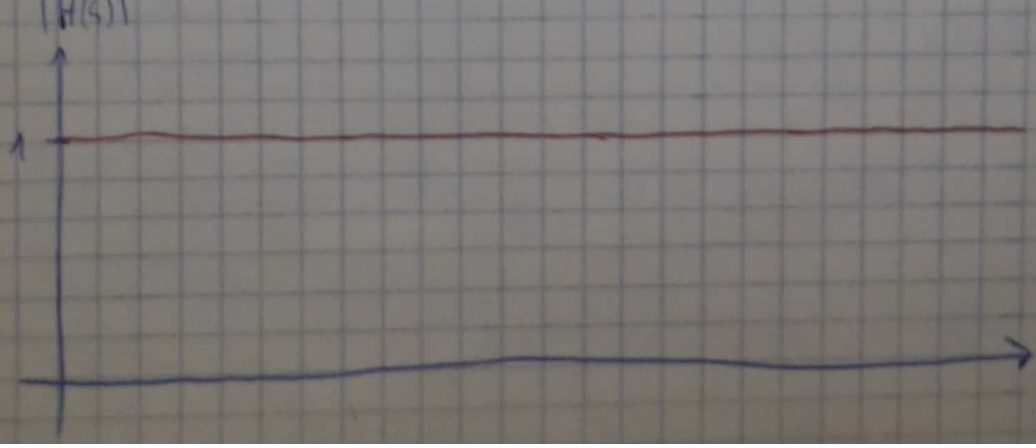
$\Rightarrow \frac{V_2}{V_1} = \frac{2SCR_3 - 1 - SCR_3}{1+SCR_3} \Rightarrow \frac{V_2}{V_1} = \frac{CR_3}{CR_3} \frac{\left(S - \frac{1}{CR_3}\right)}{\left(S + \frac{1}{CR_3}\right)}$

$\Rightarrow \boxed{\frac{V_2}{V_1} = \frac{S - \frac{1}{CR_3}}{S + \frac{1}{CR_3}}}$

CERO EN $\frac{1}{CR_3} = 1000$

POLO EN $-\frac{1}{CR_3} = -1000$





EL MÓDULO ES 1 PARA TODA W

$\frac{\prod V_{z,N}}{\prod V_{p,N}} = 1$

SIEMPRE EL POLO Y EL CERO ESTÁN EQUIDISTANTES