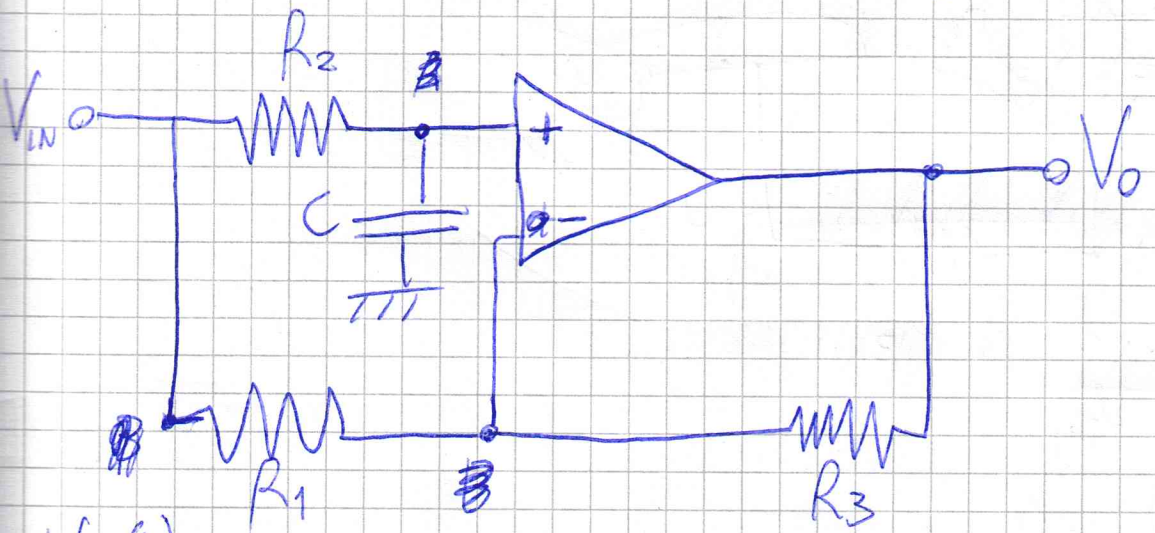
ESERCIZIO

Determina $V_o(t)$



$L^+ = |L^-| = 12V$ $\quad V_c(0) = 0V$

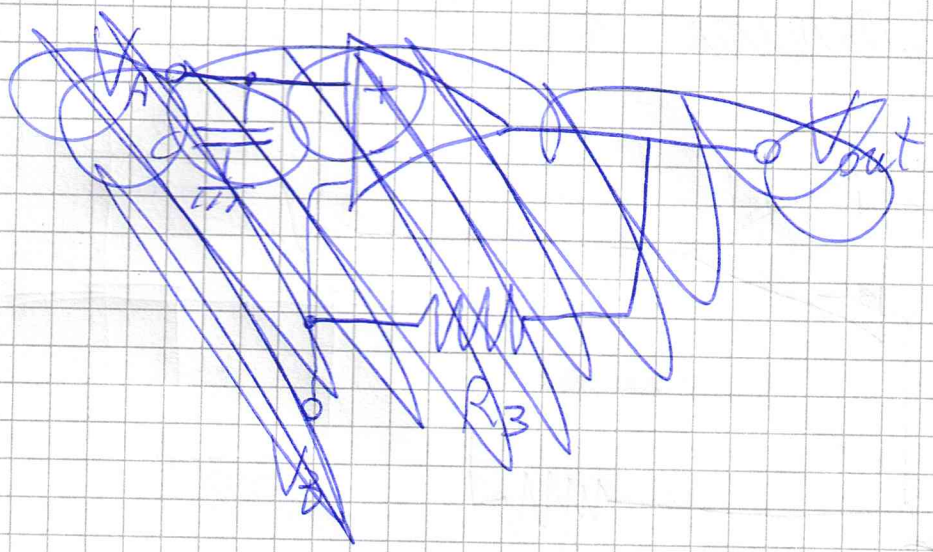
$C = 100\,nF$

$R_1 = 10K\Omega$ $\quad R_2 = 1K\Omega$ $\quad R_3 = 20K\Omega$

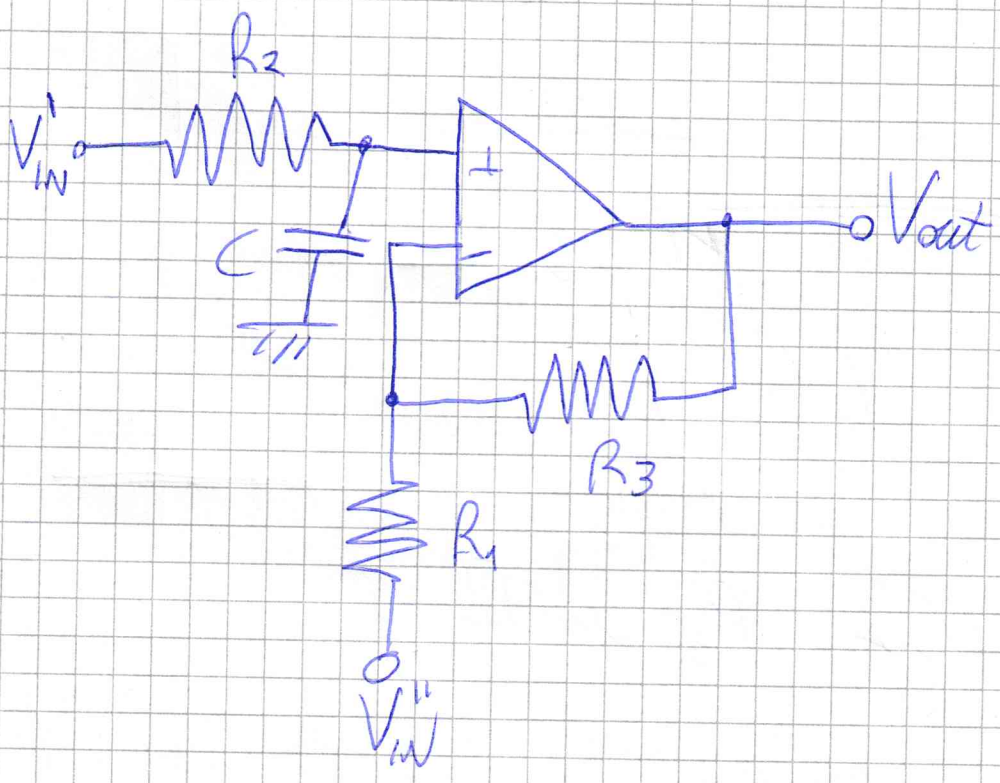
$V_A = V_{IN} \cdot \frac{R_2}{R_1 + R_2} = \frac{10}{11} V_{IN}$

$V_B = V_{IN} \cdot \frac{R_3}{R_1 + R_3} = \frac{1}{11} V_{IN}$

~~Qui nasce la considerazione~~ il circuito seguente



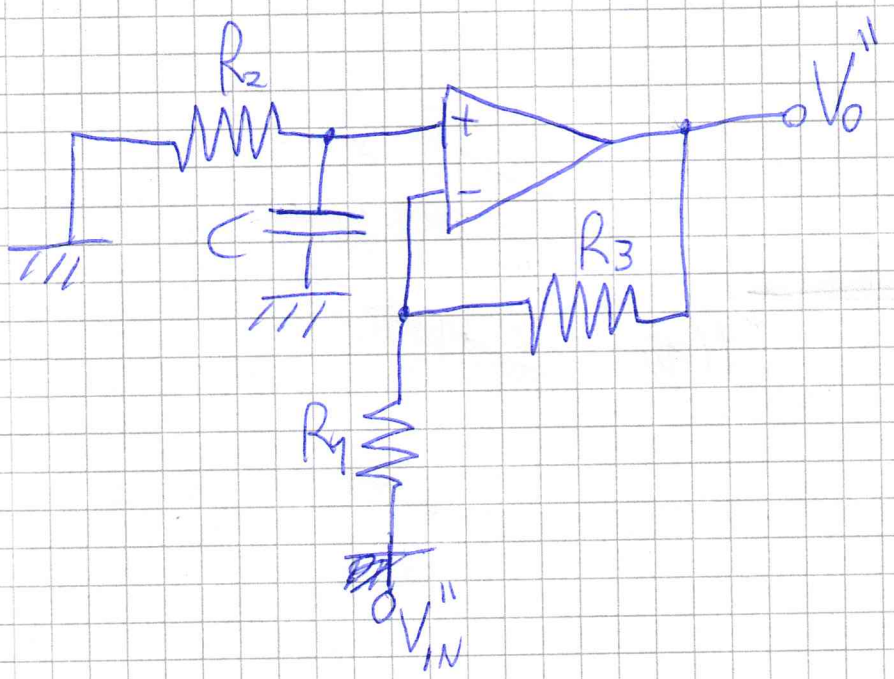
Ridisegno il circuito



Posso applicare sovrapposizione degli effetti

$V_{IN} = V'_{IN} = V''_{IN}$

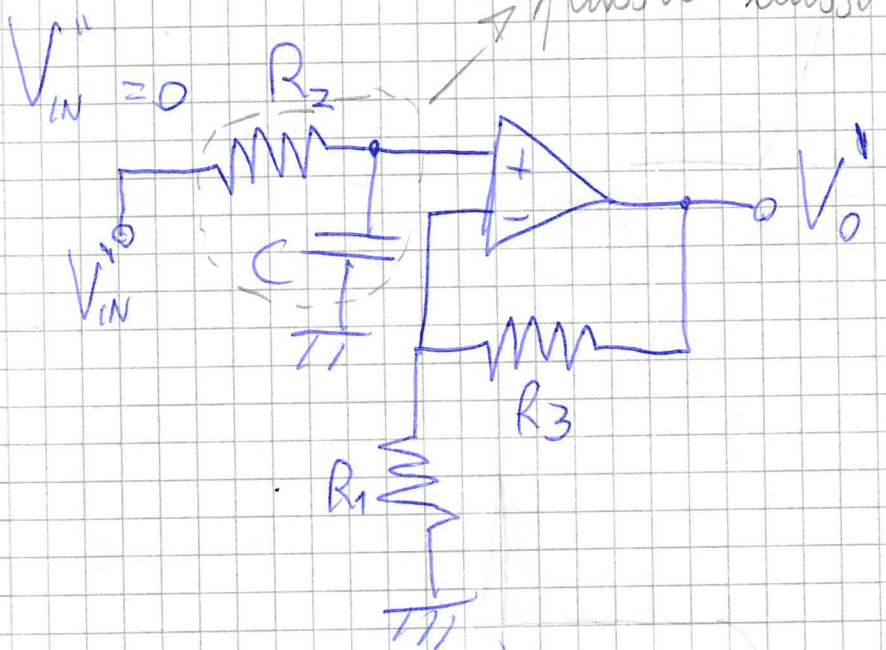
$V_{IN}' = 0$



$$V_o'' = -\frac{R_3}{R_1} V_{IN}'' = -2 V_{IN}''$$

passa-basso

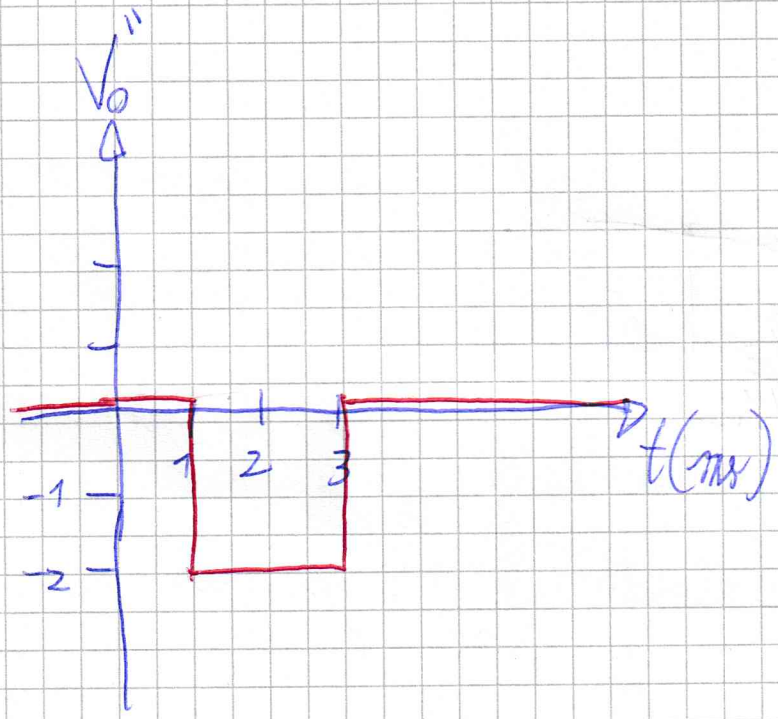
$V_{IN}'' = 0$

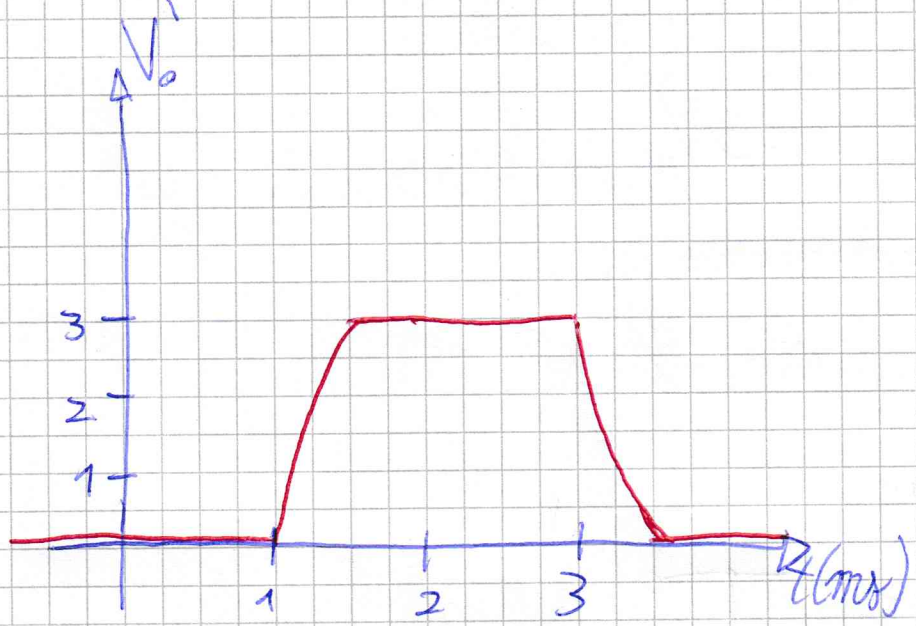


$$V_o' = V^- \left(1 + \frac{R_3}{R_1}\right) =$$

$$V_o' = V_{IN}'(1+2) = 3 V_{IN}'$$

$$\tau = R_2 C = 10^3 \cdot 10^2 \cdot 10^{-9} = \frac{0,1}{} = 10 \cdot 10^{-3} = 0,1\,ms$$





$V_0 = V_0' + V_0''$