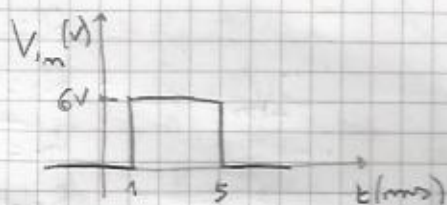
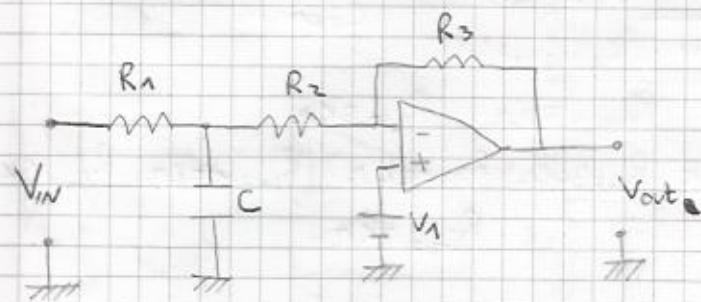


0.10/11/2010



$$R_1 = 2k\Omega \quad R_2 = 4k\Omega \quad R_3 = 12k\Omega$$

$$C = 10nF \quad V_1 = 2V$$

• $0 < t < 1$

$$V_{out} = V_1 \left(1 + \frac{R_3}{R_2 + R_1} \right) = 2 \left(1 + \frac{12}{4+2} \right) \Rightarrow V_{out} = 6V$$

• $1 < t < 5$

$$V_{out} = V_{out1} + V_{out2}$$

$$V_{out1} = V_{in} \left(-\frac{R_3}{R_2 + R_1} \right) = 6 \left(-\frac{12}{4+2} \right) \Rightarrow V_{out1} = -12V$$

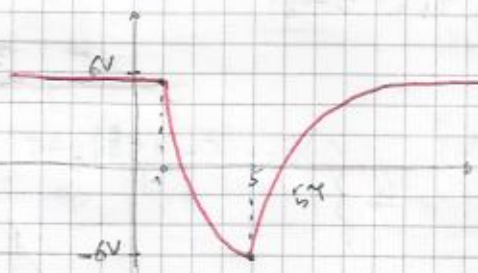
$$V_{out2} = 6V$$

$$V_{out} = -6V$$

• $t > 5$

$$V_{out} = 6V$$

Il filtro è di tipo passa-basso



$$\tau = (R_1 // R_2) C = \frac{4 \cdot 2}{4+2} \cdot 10^3 \cdot 10 \cdot 10^{-9} = \frac{1}{3} \cdot 10^{-5} s$$