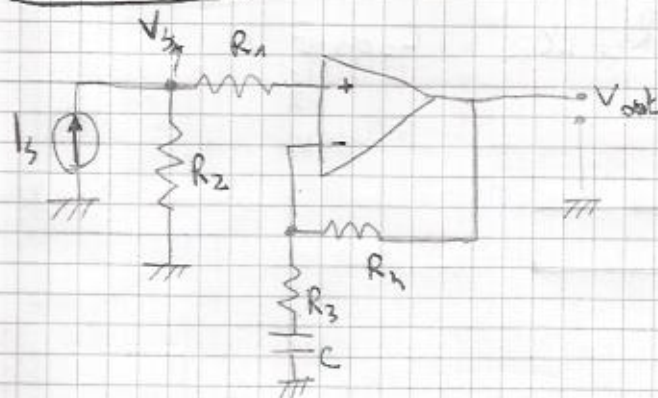
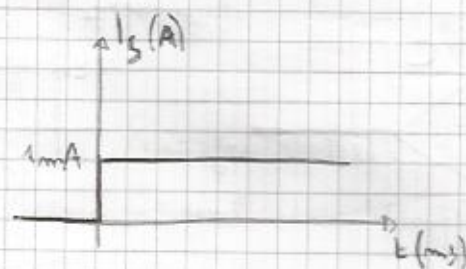


12/07/2010



$$I^+ - I^- = 12V \quad C = 1\mu F$$

$$R_1 = R_2 = 2k\Omega \quad R_3 = 1k\Omega \quad R_4 = 4k\Omega$$



$$V_s = I_s \cdot R_2 = 2V$$

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

$$V_{out1} = V_s \cdot \left(1 + \frac{R_4}{R_3}\right) = 10V$$

$$V_{out2} = \left(-\frac{R_4}{R_3}\right) \cdot V_C$$

$$= -4V_C$$

$$V_C = V_C(\infty) - [V_C(\infty) - V_C(t_0^+)] e^{-\frac{t-t_0}{\tau}}$$

$$= 2 - 2e^{-\frac{t}{\tau}}$$

$$\tau = (R_3 \parallel R_4) C$$

$$= (1+4) 10^3 \cdot 10^{-6} = 5ms$$

$$5\tau = 25ms$$

$$V_{out} = 10 - 4V_C$$

