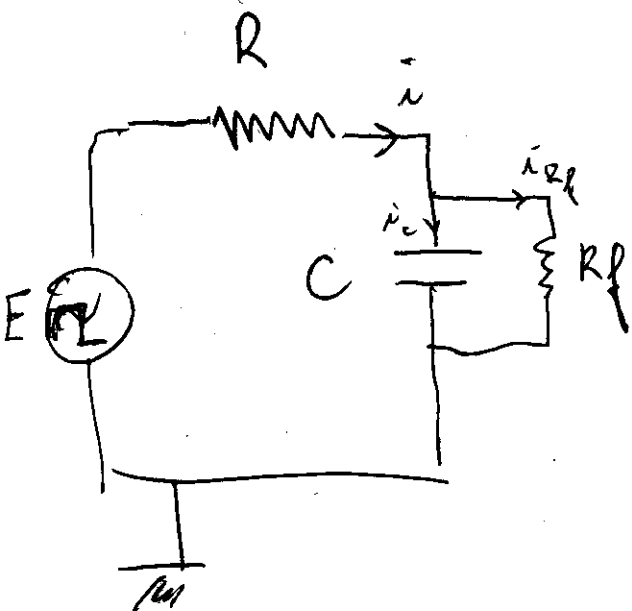




$$E = Ri + u_c$$

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$$i = i_c + i_{R_f}$$

$$i_c = C \dot{u}_c \quad i_{R_f} = \frac{u_c}{R_f}$$

$$E = RC \dot{u}_c + \frac{R}{R_f} u_c + u_c$$

$$\dot{u}_c + \frac{(R_f + R)}{R_f RC} u_c = \frac{E}{RC}$$

at $u_c(0) = 0$

$$u_c(t) = \left(\frac{R_f}{R_f + R} \right) E \left[1 - e^{-t/\tau} \right]$$

$$\tau = RC \times \left(\frac{R_f}{R_f + R} \right)$$