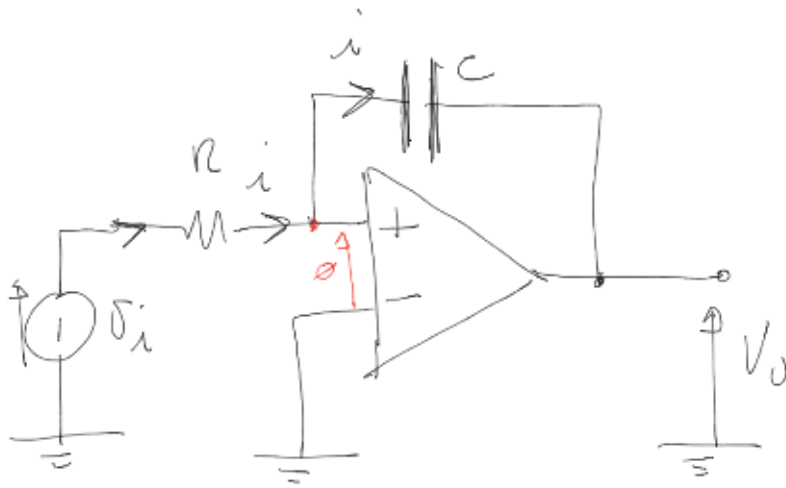


## AMP. OF INTEGRATOR



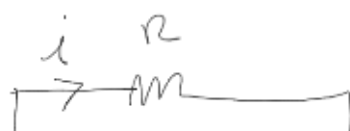
$$v_o(t) = -v_c(t)$$

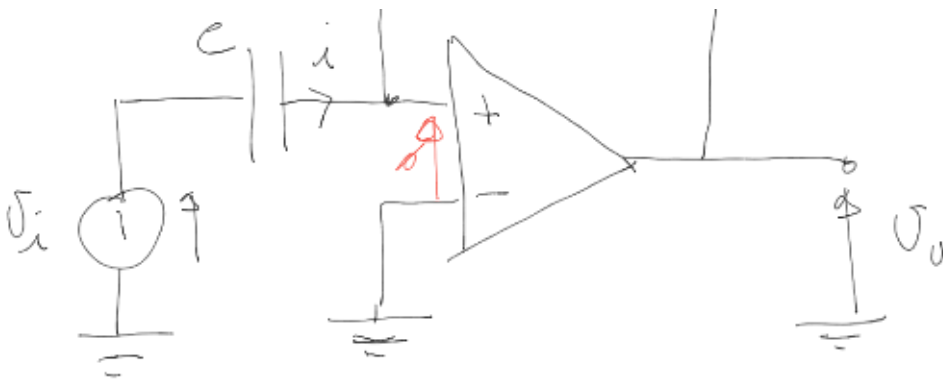
$$v_o(t) = -\left[ \frac{1}{C} \int_0^t i(t') dt' + v_c(0) \right]$$

$$i(t) = \frac{v_i(t)}{R}$$

$$v_o(t) = -\left[ \frac{1}{RC} \int_0^t v_i(t') dt' + v_c(0) \right]$$

## AMP. OF DERIVATION





$$V_o = -V_R = -R \cdot i(t)$$

$$i(t) = C \frac{dV(t)}{dt} = C \frac{dv_i(t)}{dt}$$

$$V_o(t) = -RC \frac{dv_i(t)}{dt}$$