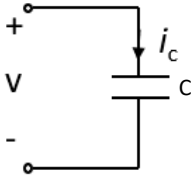
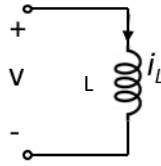


## Cheat sheet & Scratch paper



$$i_c = C \cdot \frac{dv}{dt}$$

$$v(0^+) = v(0^-)$$



$$i_L = i_L(0^+) + \frac{1}{L} \int_0^t v \cdot dt$$

$$i_L(0^+) = i_L(0^-)$$

For 1<sup>st</sup> order differential equation,  $\frac{dv}{dt} + A \cdot v = B$ , the general solution is  $v(t) = \frac{B}{A} + k \cdot e^{-A \cdot t}$

For 2<sup>nd</sup> order differential equation,  $\frac{d^2v}{dt^2} + A \cdot \frac{dv}{dt} + B \cdot v = C$ ,  $2\alpha=A; \omega_o^2=B$ .