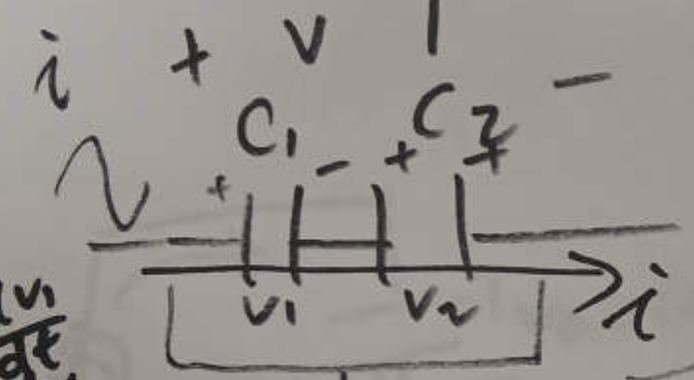
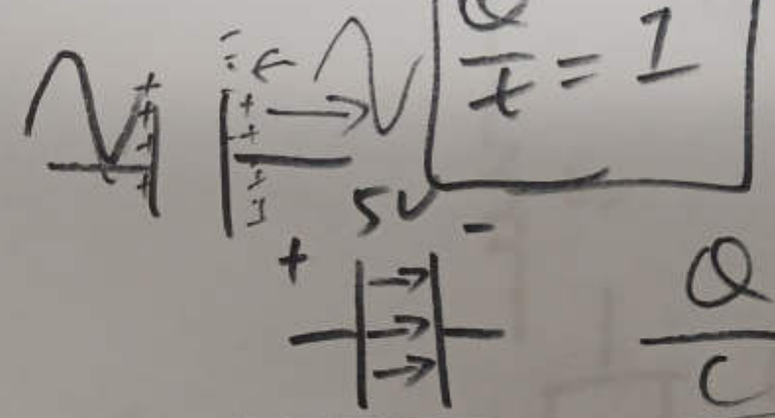
$i = C\frac{dV}{dt}$

$C \cdot V = Q$

$\frac{Q}{t} = I$



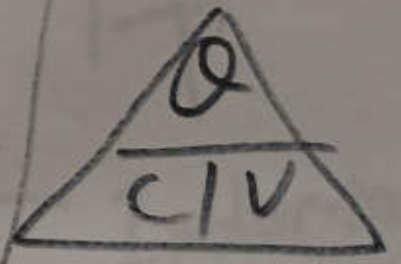


$\frac{Q}{C} = V$

$i = C_1\frac{dv_1}{dt}$
$= C_2\frac{dv_2}{dt}$

$CV = Q$

$W = \frac{1}{2}CV^2$ Energy stored in the cap



$i = C_{eq}\frac{dV}{dt} = C_{eq}\left(\frac{d(v_1+v_2)}{dt}\right)$

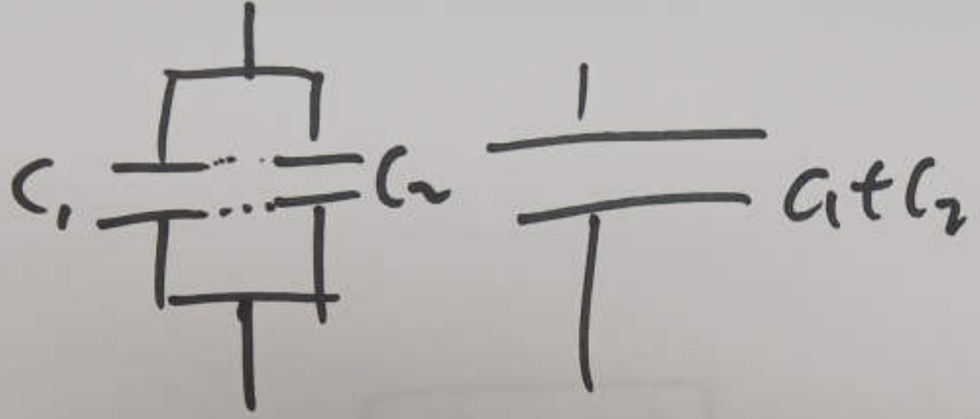
$= C_{eq}\left(\frac{dv_1}{dt} + \frac{dv_2}{dt}\right)$

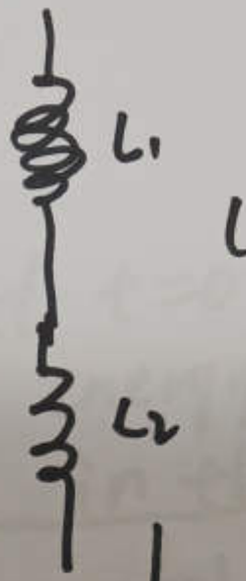
$= C_{eq}\left(\frac{i}{C_1} + \frac{i}{C_2}\right) \Rightarrow C_{eq} = \frac{1}{\frac{1}{C_1}+\frac{1}{C_2}}$

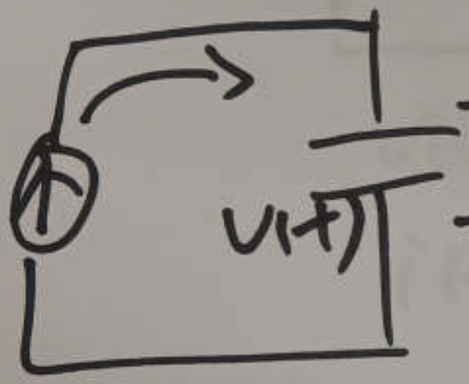
$\int_0^t p(t)\,dt$

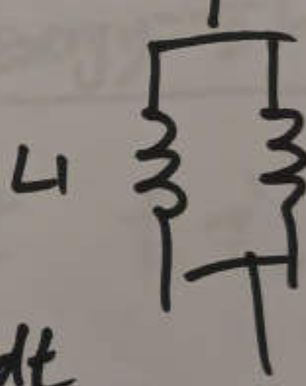
$i(t) \cdot v(t)$

①





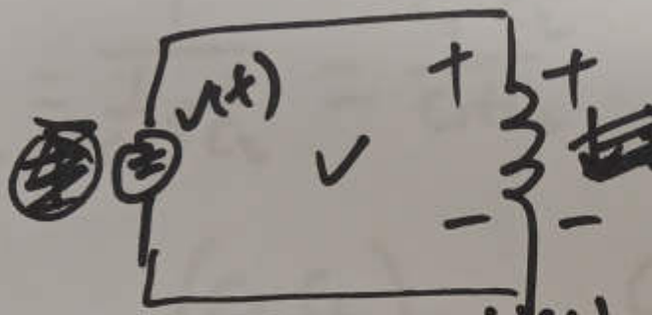




$$v(t) = 10mv + \frac{1}{C}\int_0^t i(t)\,dt$$

Inductance

Henry



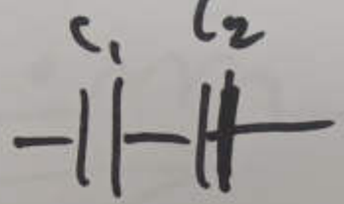
i_0

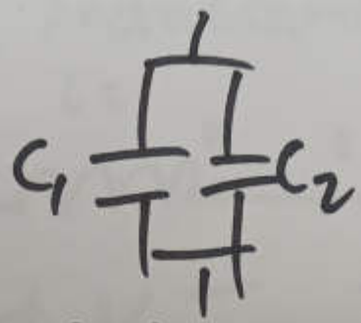
at $t=0$ energy stored in the inductor?

$$\text{Energy} = \frac{1}{2} L \cdot i_0^2$$

$$V(t) = L \frac{di(t)}{dt}$$

$$i(t) = \frac{1}{L} \int_0^t V(t)\,dt + i_0$$



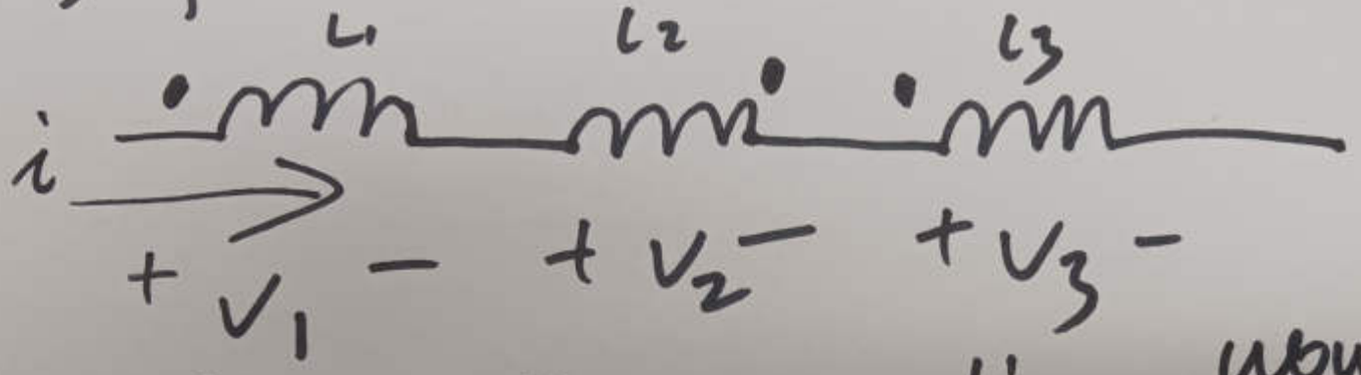


$C_1 + C_2$

$$C_{eq} = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2}} = \frac{C_1 \cdot C_2}{C_1 + C_2}$$

$$C_4 \,||\, \left(\frac{C_1 \cdot C_3}{C_1 + C_3}\right) \,||\, \frac{C_2 \cdot \left(\frac{C_5 \cdot C_7}{C_5 + C_7} + \frac{C_6 \cdot C_8}{C_6 + C_8}\right)}{C_2 + \left(\frac{C_5 \cdot C_7}{C_5 + C_7} + \frac{C_6 \cdot C_8}{C_6 + C_8}\right)}$$

self-induced inductance



$$v_1 = +L_1\frac{di}{dt} - M_{12}\frac{di}{dt} + M_{13}\frac{di}{dt}$$

$$v_2 = +L_2\frac{di}{dt} - M_{12}\frac{di}{dt} - M_{23}\frac{di}{dt}$$

$$v_3 = +L_3\frac{di}{dt} + M_{13}\frac{di}{dt} - M_{23}\frac{di}{dt}$$

wound