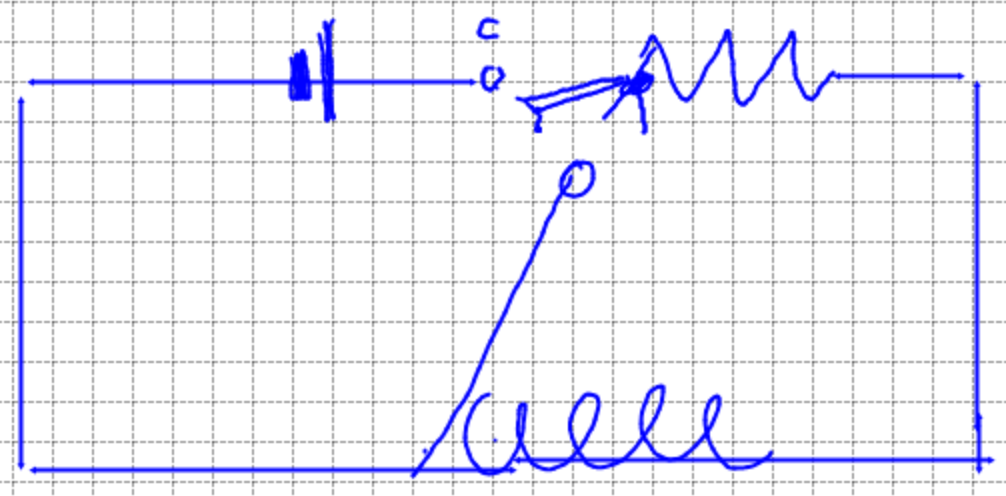


$$\mathcal{E} - Ri(t) - L\frac{di}{dt} = 0$$

$$\mathcal{E} = Ri(t) + L\frac{di}{dt}$$

$$\frac{di(t)}{\mathcal{E}/R - i(t)} = +\frac{R}{L}\cdot dt$$

$$\mathcal{E} - Ri(t) = \frac{L\,di(t)}{dt}$$

$$\frac{1}{L}dt = \frac{di(t)}{\mathcal{E} - Ri(t)}$$

$$\frac{1}{L}dt = \frac{di(t)}{R\left(\frac{\mathcal{E}}{R} - i(t)\right)}$$

$$\frac{R}{L}dt = \frac{di(t)}{\frac{\mathcal{E}}{R} - i(t)}$$

Ponemos

$$z(t) = \frac{\mathcal{E}}{R} - i(t)$$

$$dz(t) = -di(t)$$

$$-\frac{dz(t)}{z(t)} = \frac{R}{L}dt$$

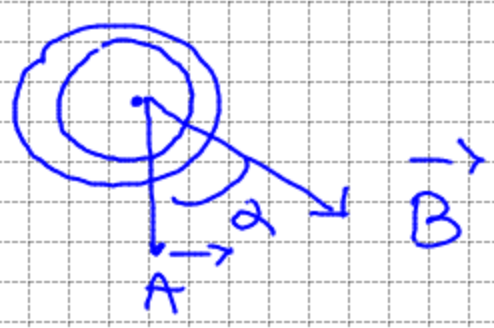
$$\frac{dz(t)}{z(t)} = -\frac{R}{L}\cdot dt$$

$$\ln z(t) = -\frac{R}{L}\cdot t + \text{cost.}$$

$$z(t) = e^{-\frac{R}{L}\cdot t}\cdot e^{\text{cost}}$$

$$i(t) = \frac{\mathcal{E}}{R} - \frac{\mathcal{E}}{R}\cdot e^{-\frac{R}{L}\cdot t}$$

$$i(t) = \frac{\mathcal{E}}{R}\left(1 - e^{-\frac{R}{L}\cdot t}\right)$$



$$\alpha = \omega\cdot t$$

$$\Phi(\vec{B}) = \vec{B}\cdot\vec{A} = B\cdot A\cdot\cos\alpha =$$

$$= B\cdot A\cdot\cos(\omega t)$$

$$\mathcal{E} = -\frac{d\Phi(\vec{B})}{dt(t)} = \frac{-d(B\cdot A\cdot\cos\omega t)}{dt} =$$

$$= \underbrace{B\cdot A\cdot\omega}_{\mathcal{E}_0}\cdot\text{sen}\,\omega t$$

CIRCUITO OHMICO

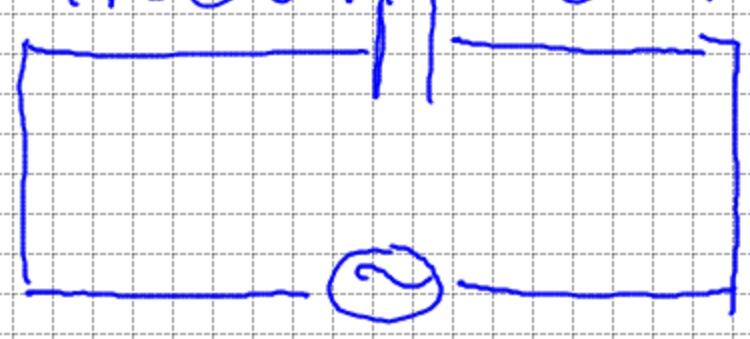
$$R_{eq} = R$$

$$i(t) = \frac{\mathcal{E}}{R} \operatorname{sen} \omega t$$

$$i(t) = i_{max} \operatorname{sen}(2\pi F \cdot t)$$

$$\mathcal{E}(t) = \mathcal{E}_0 \operatorname{sen} \omega t$$

CIRCUITO CAPACITIVO



C = capacitância condensatore

$$\mathcal{E}_0 \operatorname{sen} \omega t - \frac{Q(t)}{C} = 0$$

$$Q(t) = C \mathcal{E}_0 \operatorname{sen} \omega t$$

$$i(t) = \frac{d\,Q(t)}{dt}$$

$$i(t) = \frac{d\left[C \mathcal{E}_0 \operatorname{sen} \omega t\right]}{dt}$$

$$i(t) = C \mathcal{E}_0 \omega \cos \omega t \qquad \cos \omega t = \operatorname{sen}\left(\omega t + \frac{\pi}{2}\right)$$

$$i(t) = C \mathcal{E}_0 \omega \cdot \operatorname{sen}\left(\omega t + \frac{\pi}{2}\right)$$

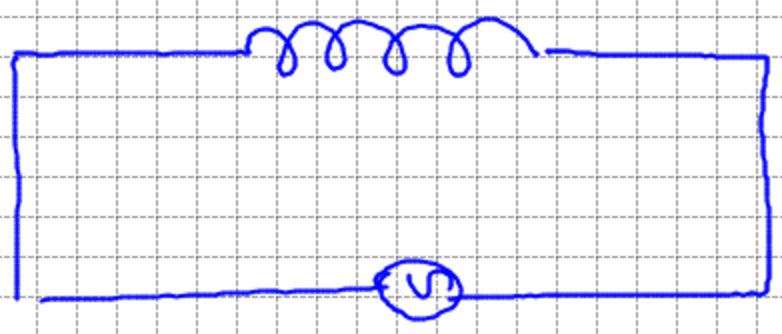
$$i_{max} = C \mathcal{E}_0 \cdot \omega$$

$$i_{max} = \frac{\mathcal{E}_0}{1/\omega C}$$

$$\frac{1}{\omega \cdot C} = X_C$$

$$i_{max} = \frac{\mathcal{E}_0}{X_C}$$

CIRCUITO INDUTTIVO



$$-L \frac{di(t)}{dt} + \mathcal{E}_0 \operatorname{sen} \omega t = 0$$