VZORCE

$$u = Ri, \;\; i = \frac{u}{R}, \;\; R = \frac{u}{i},$$

$$q = Cu, \;\; u = \frac{q}{C}, \;\; C = \frac{q}{u},$$

$$q(t) = I.t, \;\; \text{take} \;\; u(t) = \frac{I.t}{C}.$$

$$q(T) = \int_{t_0}^{T} i(t)dt + q(t_0), \;\; \text{take} \;\; u(T) = \frac{1}{C}\int_{t_0}^{T} i(t)dt + \frac{q(t_0)}{C}.$$

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

$$\Phi = L.i, \;\; i = \frac{\Phi}{L}, \;\; L = \frac{\Phi}{i}.$$

$$u(t) = \frac{d\Phi(t)}{dt}, \;\; \text{take} \;\; u(t) = L\frac{di(t)}{dt}.$$

$$i(T) = \frac{1}{L}\int_{t_0}^{T} u(t)dt + i(t_0).$$

$$i(t) = \frac{U}{L}t, \;\; i(T) = \frac{U.T}{L}.$$

$$P(t) = u(t) \cdot i(t).$$

$$W(T) = \int_0^T P(t)dt = \int_0^T u(t)i(t)dt,$$

$$W_C = \frac{1}{2}C.U^2$$

$$W_L = \frac{1}{2}L.I^2,$$

$$u(t) = U_m \sin(\omega t)$$

$$U_{ef}^2 = \frac{1}{2\pi}\int_0^{2\pi} [U_m \sin(\omega t)]^2 dt$$

$$U_{ef} = \frac{1}{\sqrt{2}}U_m \quad \rightarrow \quad U_{ef} \approx 0,707U_m$$

$$\sum_{n=1}^{N} i_n(t) = 0.$$

$$\sum_{1}^{n} u_n(t) = 0.$$

$$u_z = u_0\frac{R_z}{R_0 + R_z}.$$

$$\mathbf{\hat{U}} = \mathrm{Re}(\mathbf{\hat{U}}) + \mathrm{j}\,\mathrm{Im}(\mathbf{\hat{U}}) = \mathrm{U_m}\,(\cos\varphi + \mathrm{j}\ \sin\varphi) = \mathrm{U_m}\mathrm{e}^{\mathrm{j}\varphi}$$

$$\mathbf{\hat{I}} = \mathrm{Re}(\mathbf{\hat{I}}) + \mathrm{j}\,\mathrm{Im}(\mathbf{\hat{I}}) = \mathrm{I_m}\,(\cos\varphi + \mathrm{j}\ \sin\varphi) = \mathrm{I_m}\mathrm{e}^{\mathrm{j}\varphi}$$

$$U_m = |\mathbf{\hat{U}}|, \quad \varphi = \mathrm{arctg}\,\frac{\mathrm{Im}\mathbf{\hat{U}}}{\mathrm{Re}\mathbf{\hat{U}}}$$

$$\mathbf{\hat{Y}_2} = \mathbf{\hat{H}}\mathbf{\hat{Y}_1},$$

$$y_1(t) = Y_{1m}\sin(\omega t + \varphi_1) \quad \text{a } y_2(t) = Y_{2m}\sin(\omega t + \varphi_2),$$

$$Y_{2m} = Y_{1m}|\mathbf{\hat{H}}| = Y_{1m}\sqrt{\left(\mathrm{Re}(\mathbf{\hat{H}})\right)^2 + \left(\mathrm{Im}(\mathbf{\hat{H}})\right)^2}$$

$$\varphi_2 = \varphi_1 + \mathrm{arctg}\ \left(\frac{\mathrm{Im}(\mathbf{\hat{H}})}{\mathrm{Re}(\mathbf{\hat{H}})}\right).$$

$$f = \frac{1}{2\pi\sqrt{LC}}$$

$$i(t) = \frac{U}{R}\mathrm{e}^{(-\mathrm{t}/\tau)}$$

$$T = \tau\ln\frac{U_\infty - U_a}{U_\infty - U_b}$$