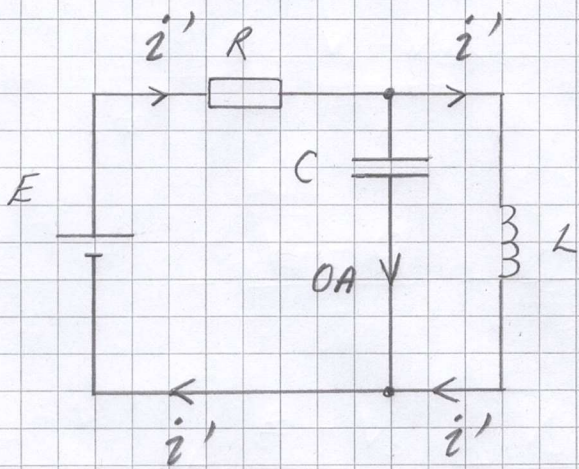


30

NOLLSTÄLL u . BERÄKNA BIDRAGET FRÅN E .

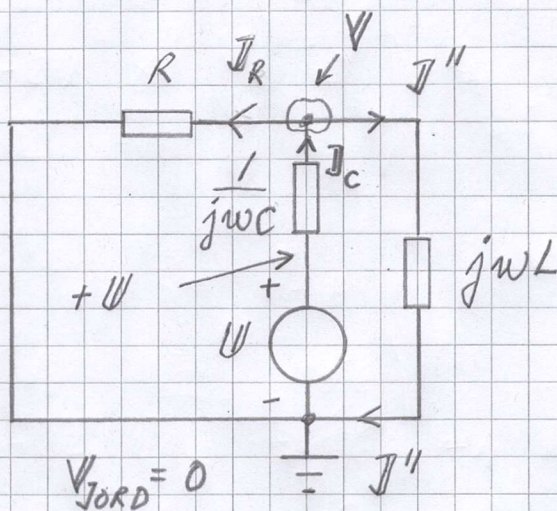


i' " ÄR EN LIK-
STRÖM, $\omega = 0$.
 $\omega L = 0$ KORTSLUTNING

$\frac{1}{\omega C} \rightarrow \infty$ AVBROTT

$$i' = \frac{E}{R} \Rightarrow i' = 1,0 \text{ A}$$

NOLLSTÄLL E , BERÄKNA BIDRAGET FRÅN u .



i'' " ÄR EN VÄXEL-
STRÖM, $\omega = 1000 \text{ s}^{-1}$

$$u = 5,0 \sqrt{2} \sin(\underbrace{1000t}_{\omega} + 0^\circ) \text{ V} \rightsquigarrow U = 5,0 \sqrt{2} e^{j0^\circ} \text{ V}$$

NODANALYS $J_C - J_R - J'' = 0 \Rightarrow$

$$\frac{U - V}{1/j\omega C} - \frac{V - V_{\text{JORD}}}{R} - \frac{V - V_{\text{JORD}}}{j\omega L} = 0$$

$$\frac{5,0\sqrt{2} \cdot e^{j0^\circ} - V}{1/j0,10} - \frac{V-0}{10} - \frac{V-0}{j20} = 0$$

$$j0,5\sqrt{2} - j0,1V - 0,1V + j0,05V = 0$$

$$0,1V + j0,05V = j0,5\sqrt{2}$$

$$V = \frac{0,5\sqrt{2} e^{j90^\circ}}{\underbrace{\sqrt{0,1^2 + 0,05^2}}_{0,112} e^{j \arctan \frac{0,05}{0,1}}}} =$$

$$= +4,47\sqrt{2} e^{j63^\circ} V$$

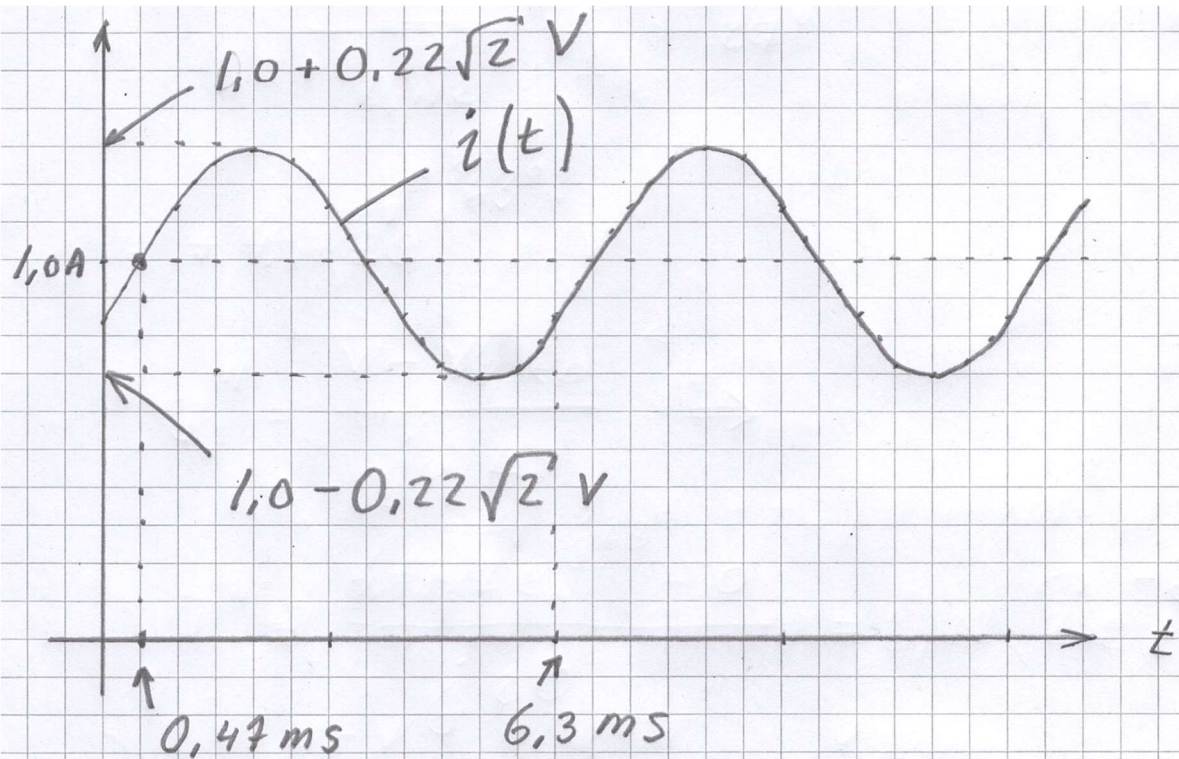
$$I'' = \frac{V - V_{\text{JORD}}}{j\omega L} \Rightarrow$$

$$I'' = \frac{4,47\sqrt{2} e^{j63^\circ} - 0}{j20} = 0,22\sqrt{2} e^{-j27^\circ} A$$

$$\rightsquigarrow i'' = 0,22\sqrt{2} \sin(1000t - 27^\circ) A$$

$$\text{SUPERPOSITION} \Rightarrow i = i' + i''$$

$$i(t) = 1,0 + 0,22\sqrt{2} \sin(1000t - 27^\circ) A$$



$$\omega = 2\pi f = \frac{2\pi}{T} \rightarrow T = 6,3 \text{ ms}$$

6,3 ms MOTSVARAR 360°

27° MOTSVARAR 0,47 ms