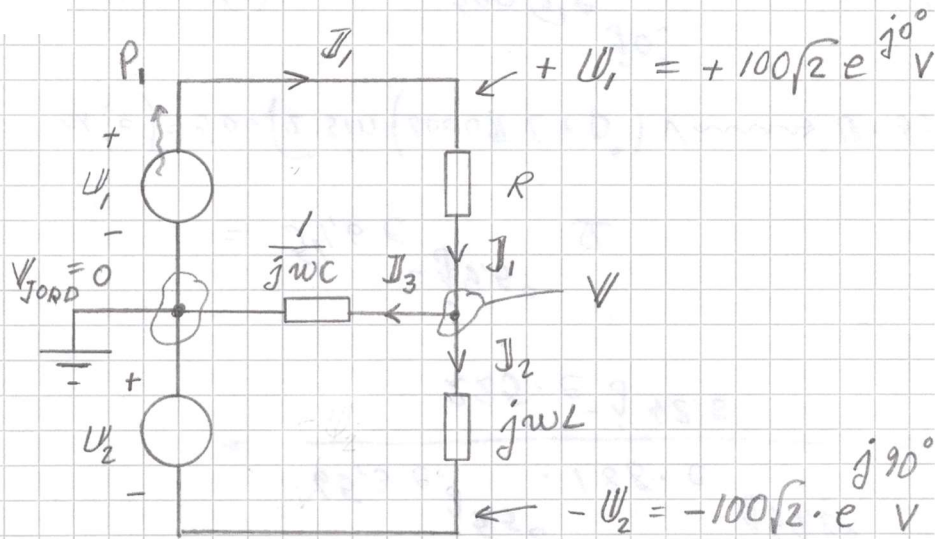


$$P_1 = U_1 I_1 \cos \varphi_1 \quad \text{DÄR} \quad \varphi_1 = \arg U_1 - \arg I_1$$



$$\text{NODANALYS} \quad I_1 - I_2 - I_3 = 0$$

$$\rightarrow \frac{U_1 - V}{R} - \frac{V - (-U_2)}{j\omega L} - \frac{V - V_{\text{JORD}}}{1/j\omega C} = 0$$

$$\frac{+100\sqrt{2} e^{j0^\circ} - V}{200} - \frac{V + 100\sqrt{2} e^{j90^\circ}}{j100} - \frac{V - 0}{1/j0.02} = 0$$

$$\frac{\sqrt{2}}{2} - 0,005 V + j0,01 V - \sqrt{2} - j0,02 V = 0$$

$$(-0,005 - j0,01) V = \frac{\sqrt{2}}{2}$$

$$V = \frac{0,5\sqrt{2}}{\sqrt{0,005^2 + 0,01^2} e^{-j116,6^\circ}} \approx 44,7\sqrt{2} e^{j116,6^\circ} V$$

$$I_1 = \frac{U_1 - V}{R} \Rightarrow$$

$$I_1 = \frac{100\sqrt{2} e^{j0^\circ} - 44,7\sqrt{2} e^{j116,6^\circ}}{200} =$$

$$= \frac{100\sqrt{2} - 44,7\sqrt{2}(\cos 116,6^\circ + j \sin 116,6^\circ)}{200}$$

$$= \frac{120\sqrt{2} - j40\sqrt{2}}{200} = 0,632\sqrt{2} e^{-j18,4^\circ} \text{ A}$$

$$\varphi_1 = \arg U_1 - \arg I_1 = 18,4^\circ$$

$$P_1 = U_1 \cdot I_1 \cdot \cos \varphi_1$$

$$P_1 = 100 \cdot 0,632 \cos(18,4^\circ) = \underline{60 \text{ W}}$$