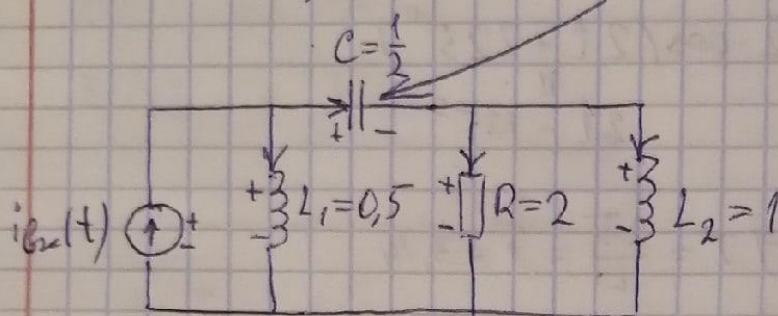


KP-3

Миронович Павел, 06.06.2000

$$N=6$$

использ, реактивно: $U_c(t)$



$$i_m(t) = 20\sqrt{2} \cos(2t - 45^\circ)$$

Переведем в комплексную область

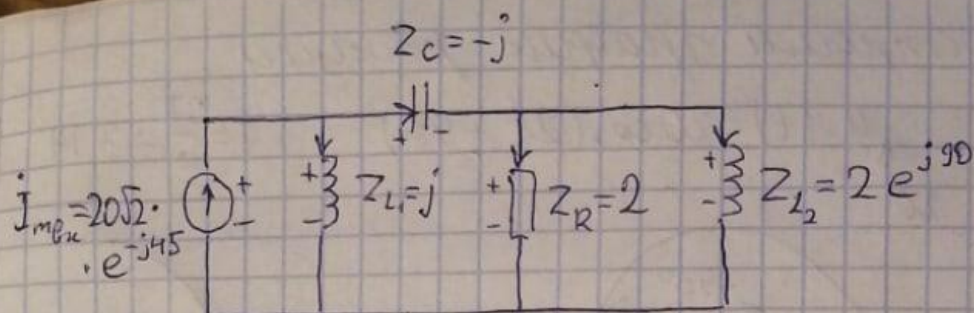
$$R=2$$

$$Z_{L1} = j\omega L_1 = j = e^{j90^\circ}$$

$$Z_{L2} = j\omega L_2 = j2 = 2e^{j90^\circ}$$

$$Z_C = -j \frac{1}{\omega C} = -j = e^{-j90^\circ}$$

$$\dot{I}_{mx} = 20\sqrt{2} e^{-j45^\circ}$$



Z_{bx} :

$$Z_{R||L2} = \left(\frac{1}{2} + \frac{1}{2j} \right)^{-1} = \left(\frac{j+1}{2j} \right)^{-1} = \frac{2j(1-j)}{2} = 1+j$$

$$Z_{c+(R||L2)} = 1+j-j = 1$$

$$Z_{bx} = Z_{L1} || Z_{c+(R||L2)} = \left(\frac{1}{j} + \frac{1}{1} \right)^{-1} = \left(\frac{1+j}{j} \right)^{-1} = \frac{j}{1+j} = \frac{j(1-j)}{2} = \frac{1}{2} + j\frac{1}{2} = \frac{1}{\sqrt{2}} \cdot e^{j45}$$

$$u_{mbx} = \frac{20\sqrt{2} e^{-j45}}{\frac{1}{\sqrt{2}}} \cdot \frac{1}{\sqrt{2}} \cdot e^{j45} = 20$$

$$u_{mbx} = u_{m_{c+(R||L2)}} = 20$$

$$i_{m_{c+(R||L2)}} = \frac{20}{1} = 20 = i_{mc}$$

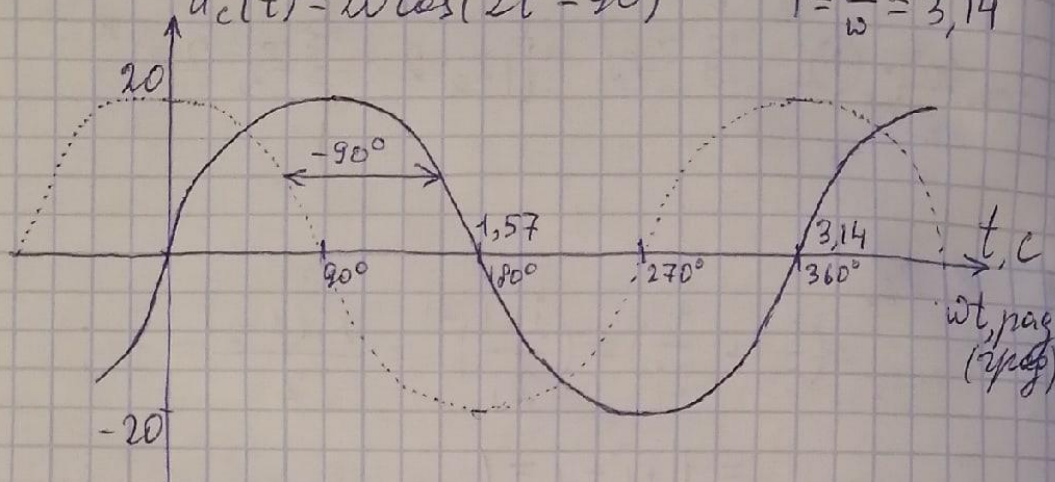
$$u_{mc} = 20 \cdot (-j) = -j20 = 20e^{-j90}$$

$$u_c = 20 \cos(2t - 90^\circ)$$

построим график реакции

$$u_c(t) = 20 \cos(2t - 90^\circ)$$

$$T = \frac{2\pi}{\omega} = 3,14$$

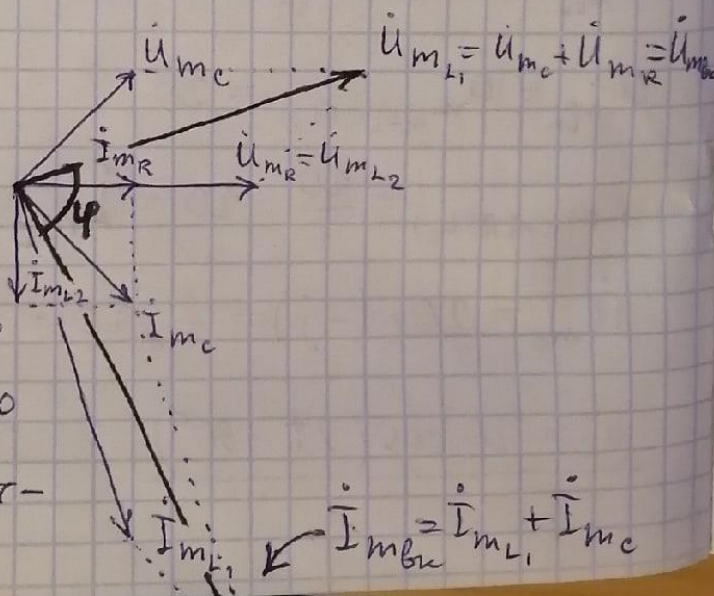


векторная диаграмма

$$\dot{U}_{mR} = 2$$

$$\dot{I}_{mR} = 1$$

$$\dot{U}_{mL} = 2$$



$\dot{I}_{m_{вн}}$ внешнего не
влез, но я думаю
это не критично -
но :)