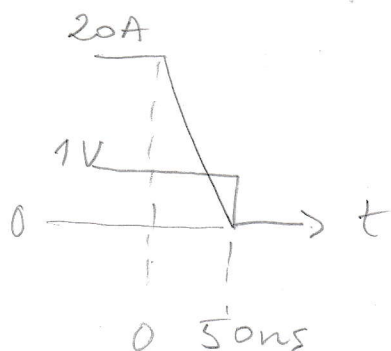
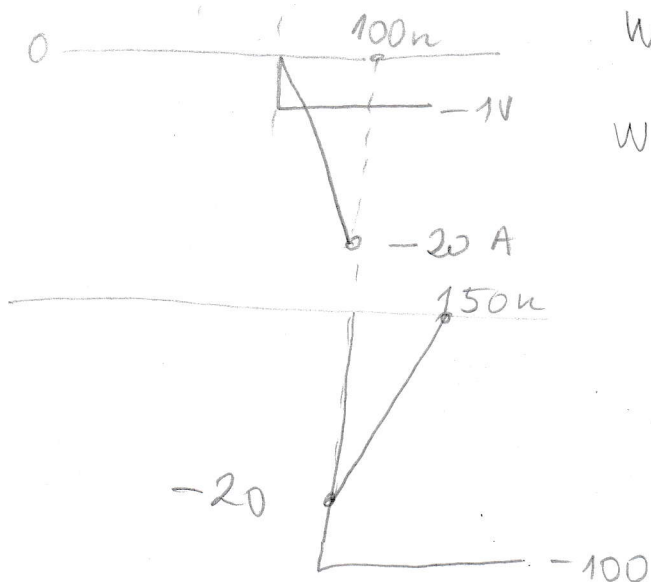


1



$$W_1 = 20 \cdot 1 \cdot 50n \cdot \frac{1}{2}$$

$$W_1 = 1000n \cdot \frac{1}{2} = 0,5 \mu J$$



$$W_2 = -20 \cdot (-1) \cdot 50n \cdot \frac{1}{2}$$

$$W_2 = 0,5 \mu J$$

$$W_3 = -20 \cdot (-100) \cdot 50n \cdot \frac{1}{2}$$

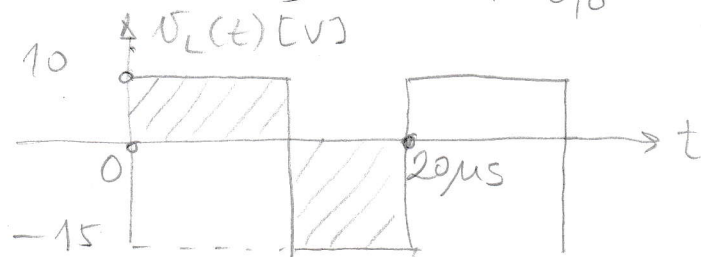
$$W_3 = 50000n \cdot \frac{1}{2} = 25 \mu J$$

$$P = f(W_1 + W_2 + W_3) = 20 \cdot 10^3 \cdot (0,5 + 0,5 + 25) \cdot 10^{-6}$$

$$P = 20 \cdot 26 \cdot 10^3 = 0,52 W$$

2

$$V_o = \frac{D}{1-D} V_2 = \frac{0,6}{1-0,6} \cdot 10 = 15 V$$



$$\Delta I_L = \frac{\int_0^T v_L dt}{L}$$

$$\Delta I_L = \frac{12 \cdot 10^6 \cdot 10}{L} = 0,1 I_L$$

$$I_o = \frac{V_o}{2} = \frac{15}{2} = 7,5 A ; \Delta I_L = 1,875 A = \frac{120 \cdot 10^6}{L}$$

$$L = \frac{120 \cdot 10^6}{1,875} = 64 \mu H$$

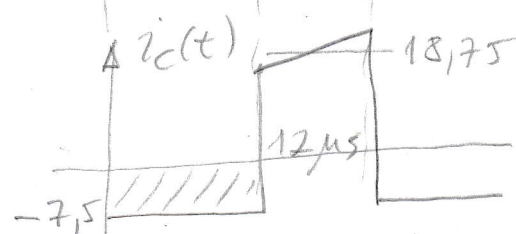


$$(1-D) \cdot I_L = I_o \Rightarrow I_L = \frac{7,5}{1-0,6} = 18,75 A$$

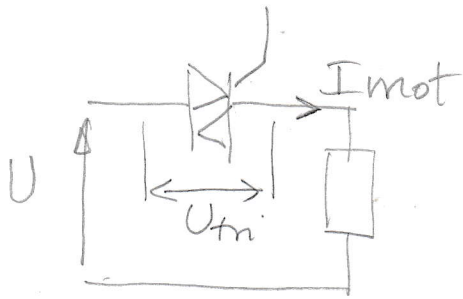
$$\Delta V_o = \frac{1}{C} \Delta Q ; \Delta Q = 7,5 \cdot 12 \cdot 10^6$$

$$\Delta V_o = \frac{1}{C} \cdot 7,5 \cdot 12 \cdot 10^6 ; \Delta V_o = 300 mV$$

$$C = \frac{7,5 \cdot 12 \cdot 10^6}{0,3} = 300 \mu F$$



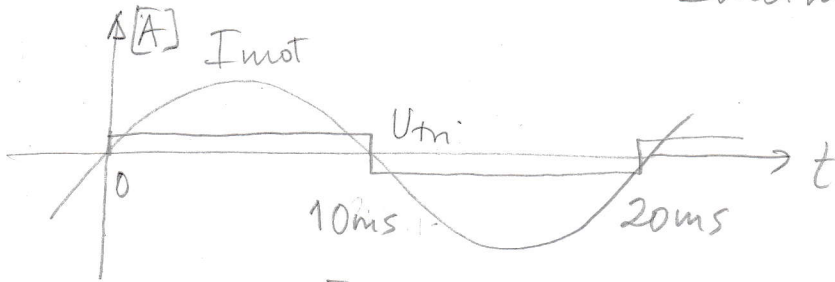
3



$$P = U \cdot I_{mot} \Rightarrow$$

$$I_{mot} = \frac{P}{U} = \frac{800}{230} = 3,48 A$$

$$I_{motm} = \sqrt{2} I_{mot} = 4,92 A$$



$$P_{thi} = \frac{2}{T} \int_0^{T/2} U_{thi} \cdot I_{mot_{thi}} dt$$

$$= \frac{1}{10^{-2}} \int_0^{10ms} 1,2 \cdot I_m \cdot \sin \omega t dt$$

$$= \cancel{100} \cdot 10^{-2} \cdot 1,2 \cdot 4,92 \cdot \frac{2}{\pi} = \underline{\underline{3,76 W}}$$