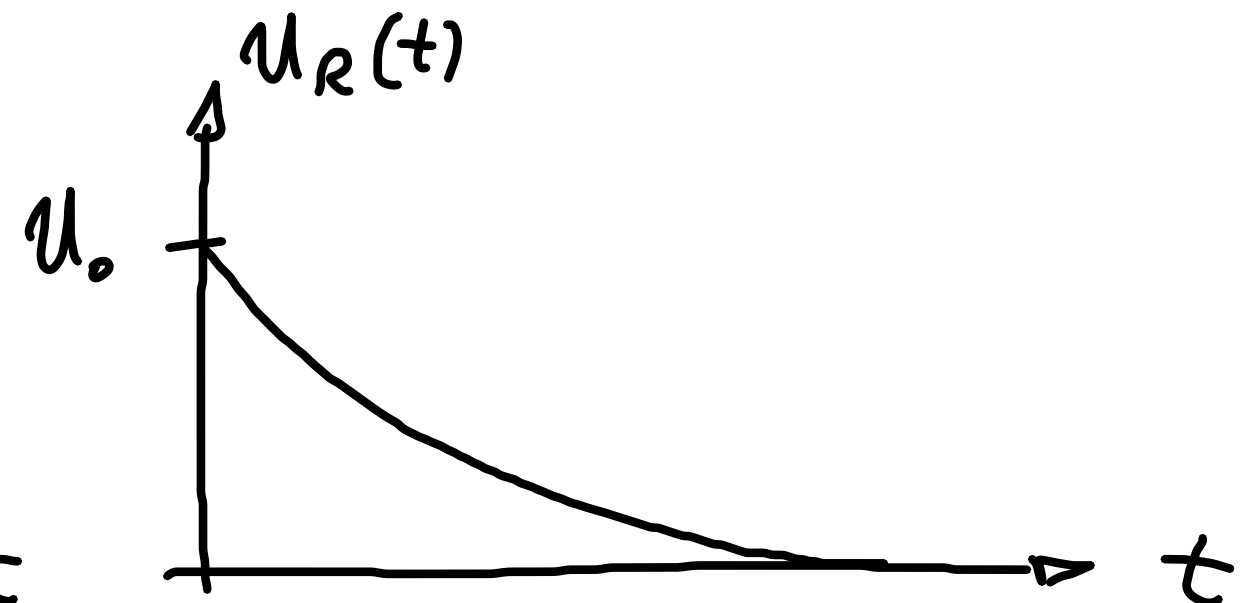
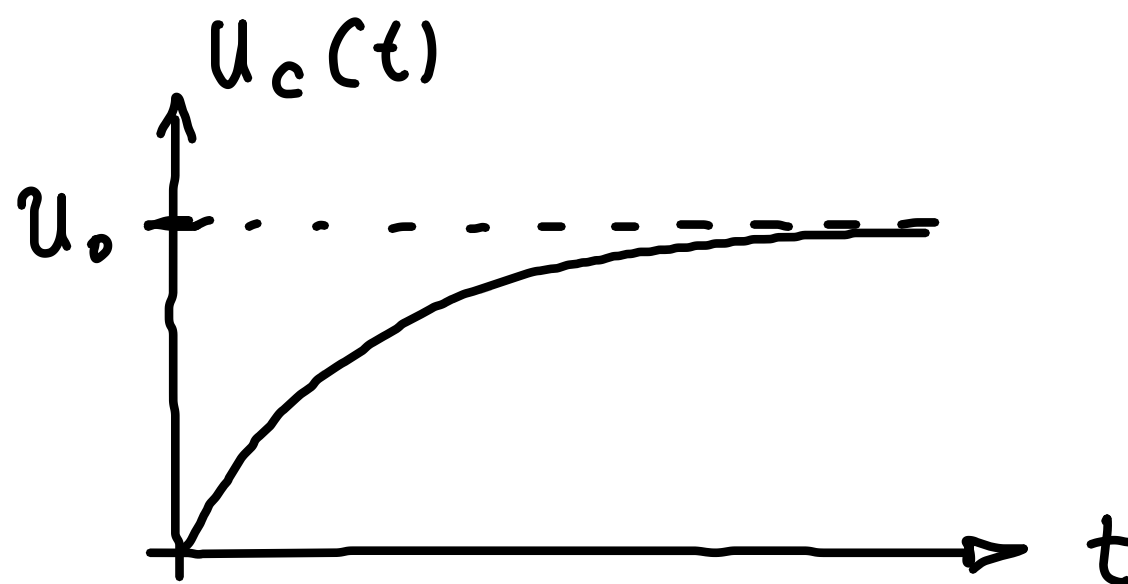
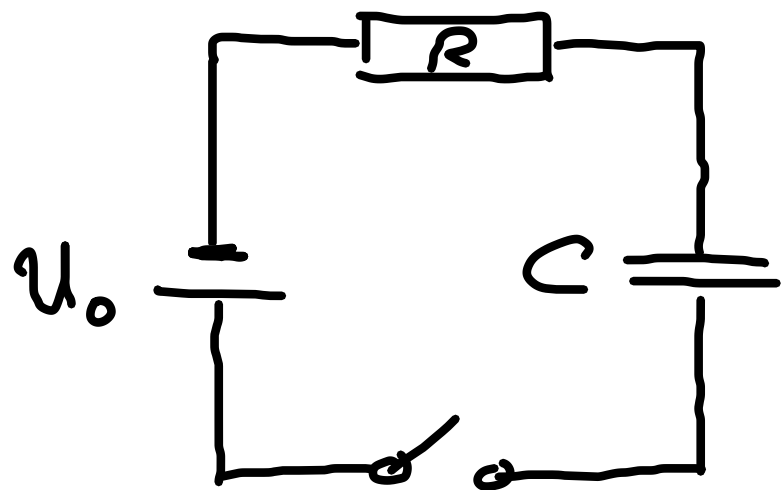


Physics hour 07

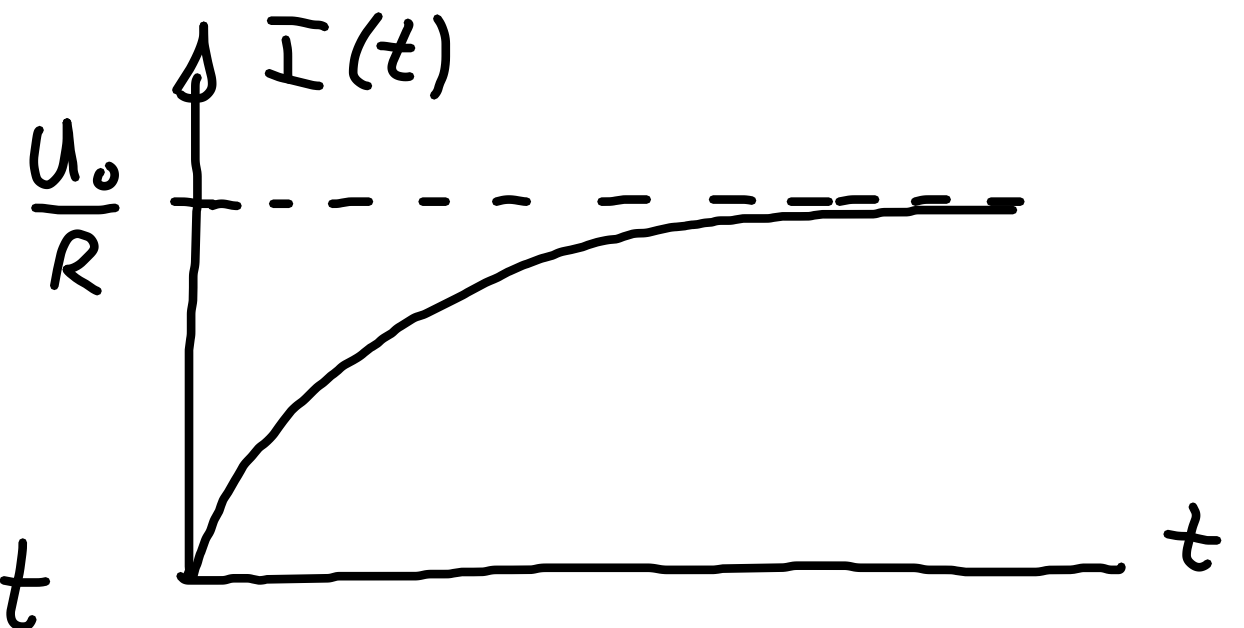
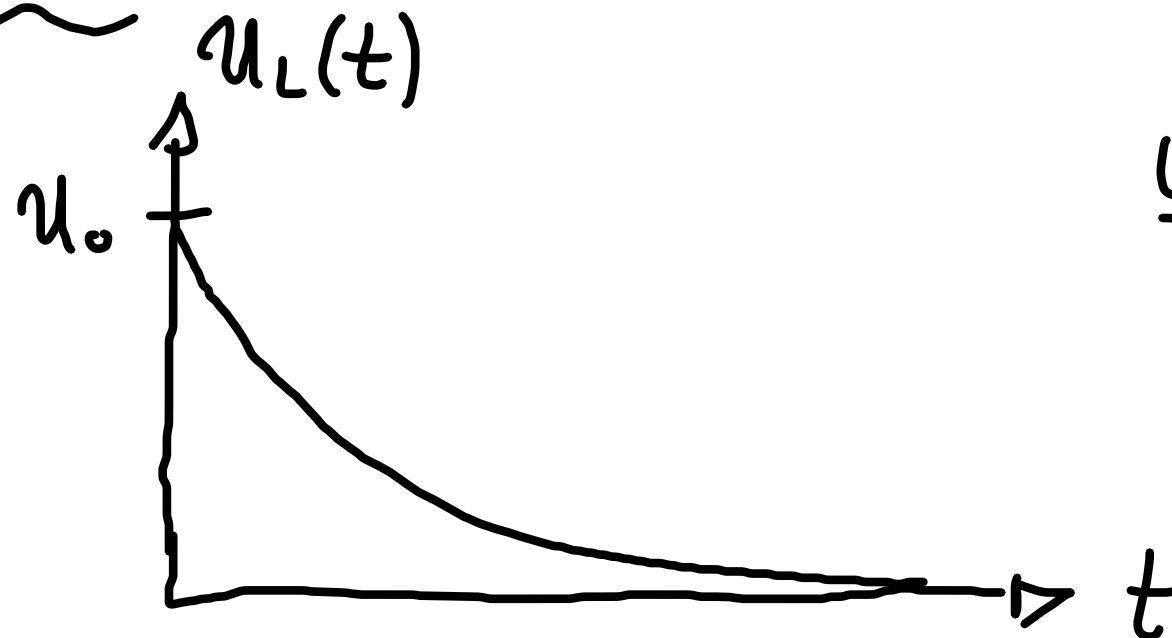
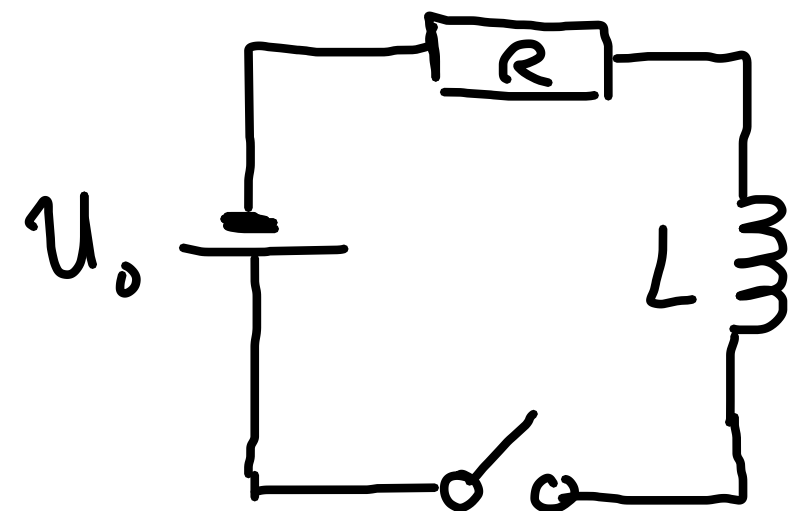
1) Transformer

$$\frac{I_1}{I_2} = \frac{N_2}{N_1} \rightarrow I_2 = I_1 \cdot \frac{N_1}{N_2} = 3A \cdot \frac{100}{20} = 15A$$

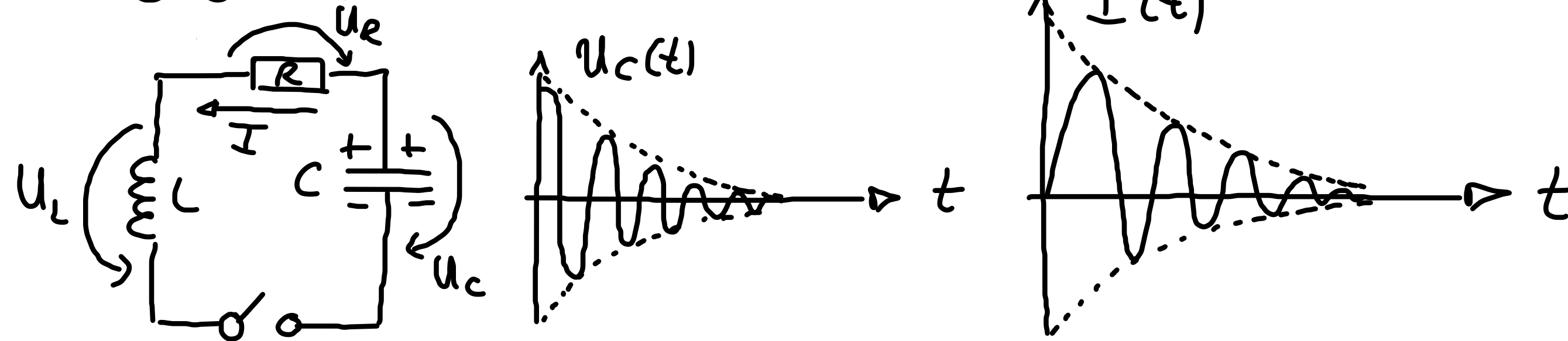
2) RC-Kreis I/II



3) RL-Kreis I/II



4) RCL-Kreis I/II



5) WLAN-Netz

$$c = \frac{\lambda}{T} = \lambda \cdot f \Rightarrow \lambda = \frac{c}{f} = \frac{3 \cdot 10^8 \frac{\text{m}}{\text{s}}}{5 \cdot 10^9 \frac{1}{\text{s}}} = 0,6 \cdot 10^{-1} \text{ m} = 6 \text{ cm}$$

6) Intensität an der Sonnenoberfläche

$$I = \frac{P}{A} = \frac{P}{4\pi R^2} = \frac{3,84 \cdot 10^{26} \text{ W}}{4\pi (695510000 \text{ m})^2} = 63 \cdot 10^6 \frac{\text{W}}{\text{m}^2} = 63 \frac{\text{MW}}{\text{m}^2}$$

7) Intensität eines Laserpointers

$$I = \frac{P}{A} = \frac{P}{\pi R^2} = \frac{10^{-3} \text{ W}}{\pi \cdot 4 \cdot 10^{-12} \text{ m}^2} = 81 \frac{\text{MW}}{\text{m}^2}$$