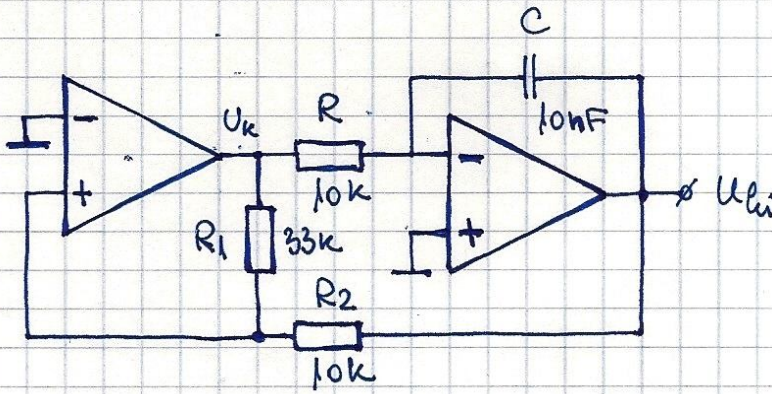
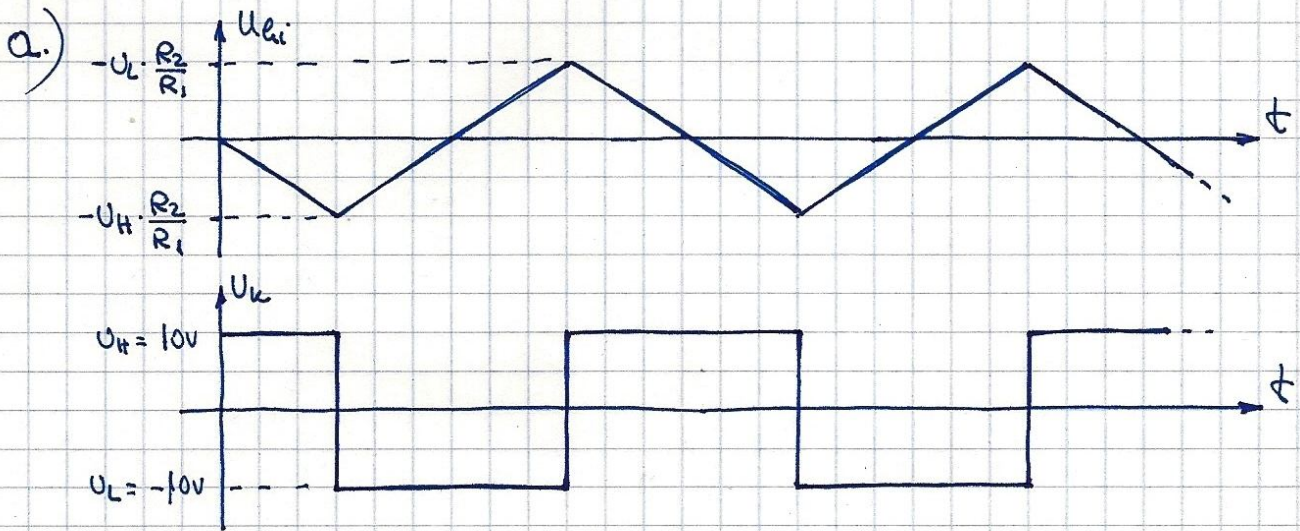


(21.)



$$U_k = \pm 10V$$



$$f = \frac{1}{4RC} \cdot \frac{R_1}{R_2} = \frac{1}{4 \cdot 10k \cdot 10 \cdot 10^{-9}} \cdot \frac{33k}{10k} \approx \underline{\underline{8,25 \text{ kHz}}}$$

$$b.) \quad \frac{f}{f_0} = \frac{R'}{R} \Rightarrow R' = R \cdot \frac{f}{f_0} = 10k \cdot \frac{8,25 \text{ kHz}}{20 \text{ kHz}} \approx \underline{\underline{4,1 \text{ k}\Omega}}$$

$$c.) \quad U_{Li \text{ min}} = -U_H \cdot \frac{R_2}{R_1} = -10 \cdot \frac{10k}{33k} \approx -3V$$

$$U_{Li \text{ max}} = -U_L \cdot \frac{R_2}{R_1} = -(-10) \cdot \frac{10k}{33k} \approx +3V$$