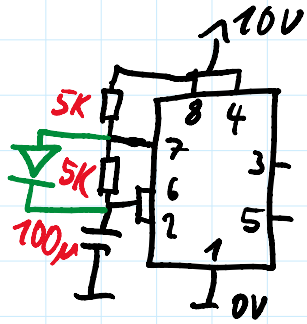
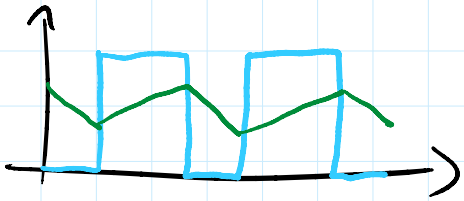
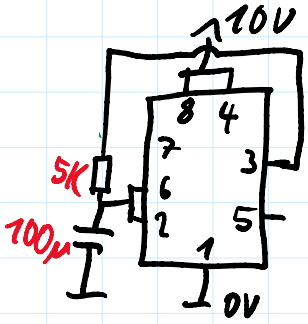
# Einheit 11

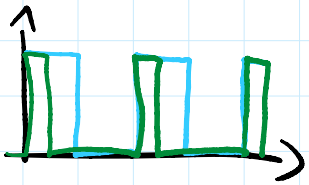
Mittwoch, 24. September 2025 19:53

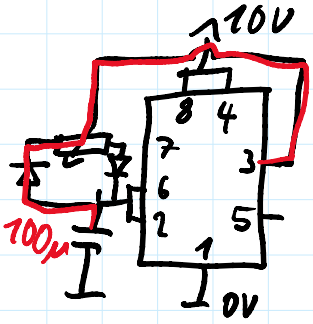
(Das Bild hab ich entfernt, keinen Bock auf Uhrheberrechtsprobleme)

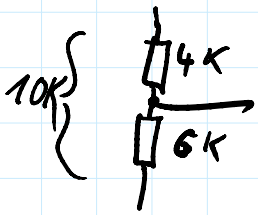


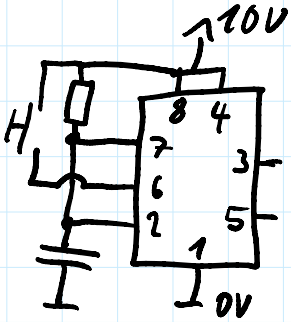



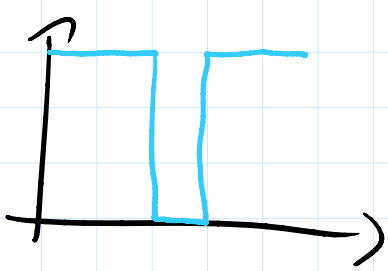


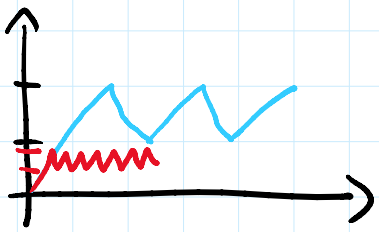





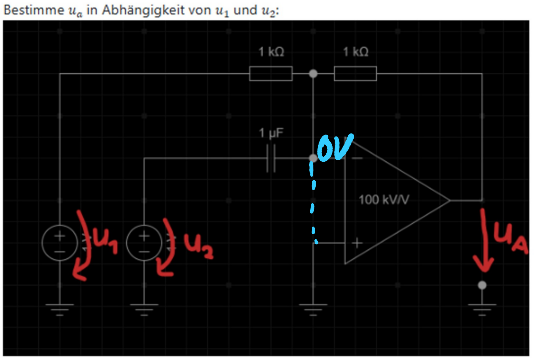





## 2. inv. OpV mit Gegenkopplung

1. Bestimme $u_a$ in Abhängigkeit von $u_1$ und $u_2$:

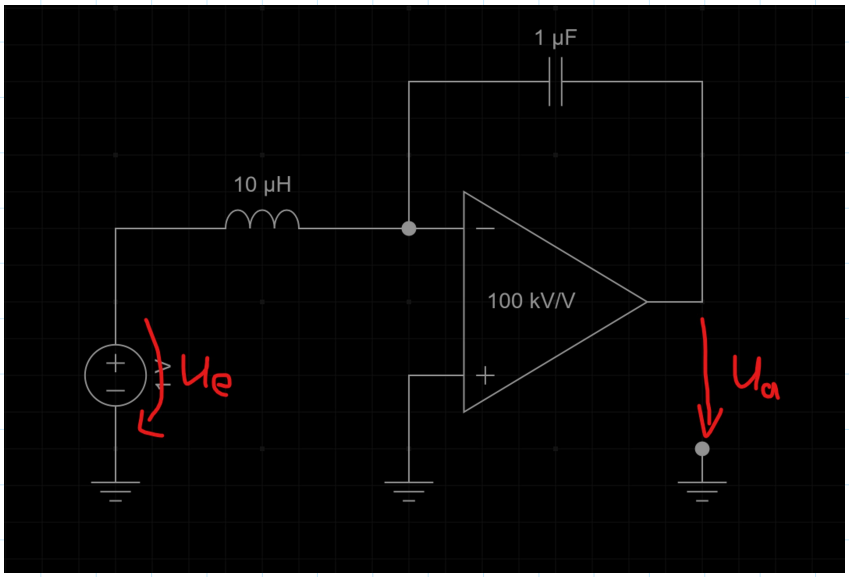



$$i_R = \frac{u_R}{R} = \frac{u_1}{R}$$

$$i_C = C\frac{d}{dt}u_C = C\frac{d}{dt}u_2$$

$$i = i_R + i_C$$

$$u_1 = -\left(C\frac{d}{dt}u_2 + \frac{1}{R}u_1\right)\cdot R$$




$$i_L = \frac{1}{L}\int u_e\,dt$$

$$i_C = C\frac{d}{dt}u_C$$

$$(\Rightarrow u_C = \frac{1}{C}\cdot\int i_C\,dt$$

$$u_C = -\frac{1}{C}\int\frac{1}{L}\int u_e\,dt\,dt = -\frac{1}{LC}\int\int u_e\,dt^2$$