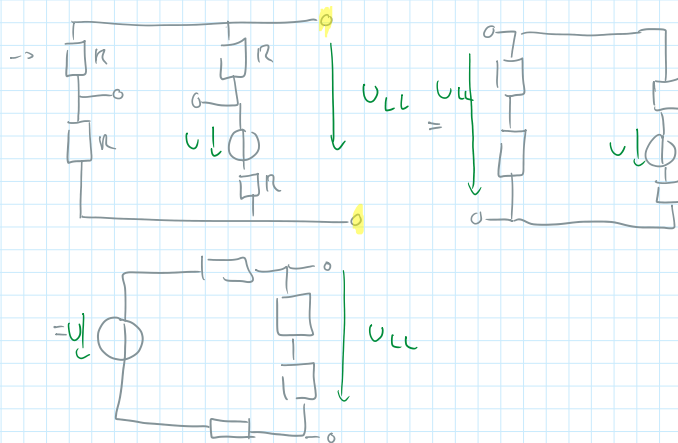


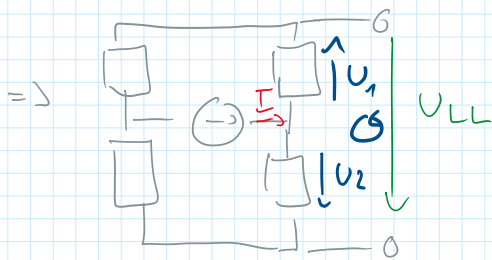
Leerlaufspannung:

1)  $I = 0$

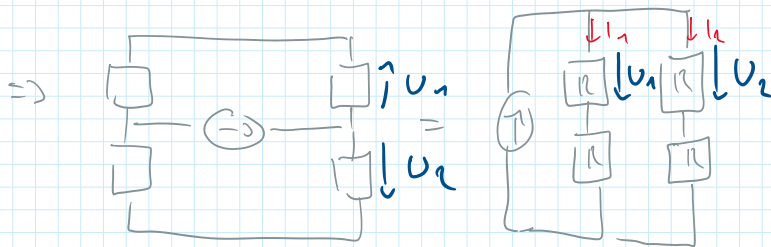


$$\Rightarrow \underline{U_{LL}} = U \cdot \frac{2R}{4R} = \underline{\underline{\frac{U}{2}}}$$

2)  $U = 0$



$\odot: U_{LL} = -U_1 + U_2$



$\Rightarrow$  Stromteiler:  $I_1 = I \cdot \frac{2R}{4R} = \underline{\underline{\frac{I}{2}}} = I_2$

$$\Rightarrow U_1 = I_1 \cdot R_1 = \frac{I \cdot R}{2}$$

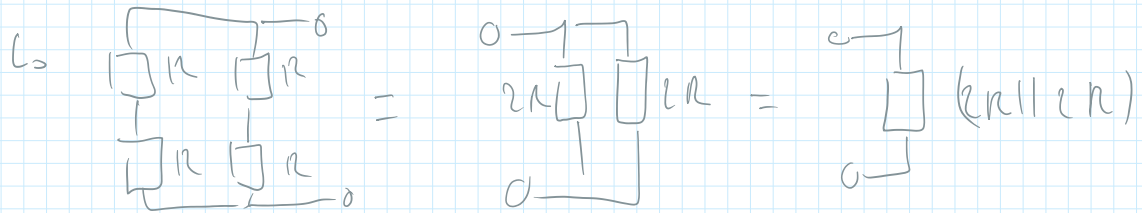
$$U_2 = I_2 \cdot R_2 = \frac{I \cdot R}{2}$$

$$\Rightarrow \underline{\underline{U_{LL} = U_2 - U_1 = 0V}}$$

$$\Rightarrow \underline{\underline{U_{LL, ges} = 0V + \frac{U}{2} = \frac{U}{2}}}$$

Innenwiderstand:

$$U \stackrel{!}{=} 0, I \stackrel{!}{=} 0$$



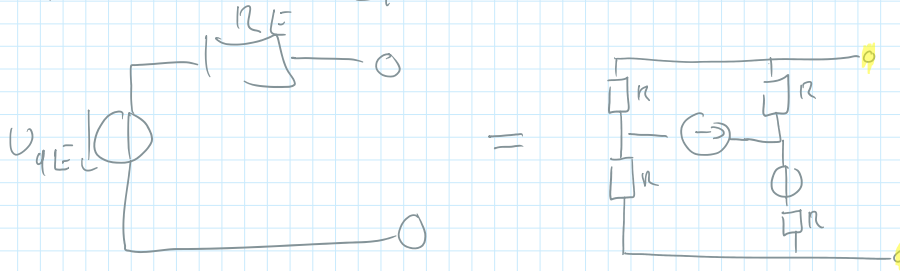
$$R_i = \underline{\underline{R}}$$

$$\Rightarrow U_{qE} = \frac{U}{2} = 6V$$

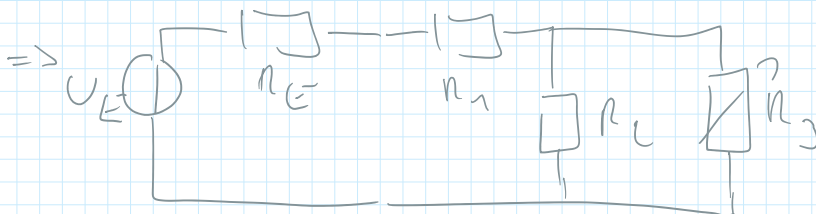
$$R_E = R = 75\Omega$$

$$\underline{\underline{I_q = \frac{U}{2R} = 0.4A}}}$$

2) Wir haben:



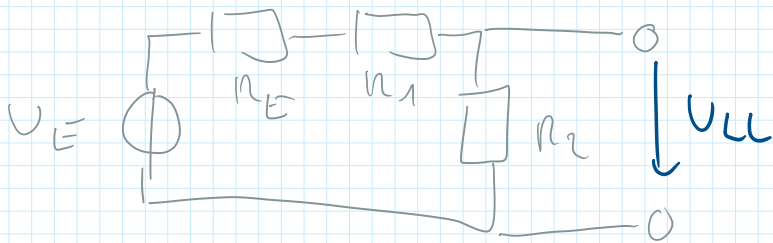
Wir hängen Last an:



Maximale Leistung in  $R_3$

$\Rightarrow R_3$  entfernen, Ersatzquelle:

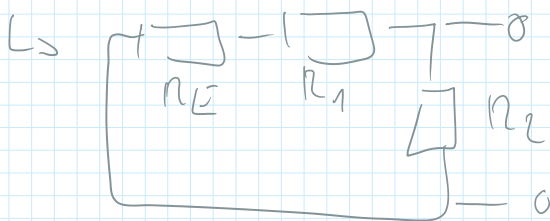




$$U_{LL} = U_E \cdot \frac{R_2}{R_E + R_1 + R_2} = 5V \cdot \frac{1.2k\Omega}{390\Omega + 1.2k\Omega + 10\Omega}$$

$$= 3.75V$$

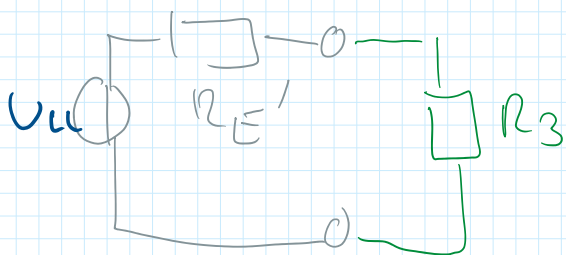
$R_E'$ :  $U_E \stackrel{!}{=} 0$



$$\Rightarrow R_E' = (R_2 \parallel R_1 + R_E)$$

$$= \underline{\underline{300\Omega}}$$

$\Rightarrow$  Ersatzquelle:



$P_{\text{maximal}}$  für  $R_3 = R_E' = \underline{\underline{300\Omega}}$

c) Spannungsteiler

$$U_{R_3} = U_{LL} \cdot \frac{R_3}{R_E' + R_3} = \frac{U_{LL}}{2} = \underline{\underline{1.875V}}$$

Leistung:

Leistung.

$$P_3 = \frac{U_3^2}{R_3} = \underline{\underline{11.72 \text{ mW}}}$$