

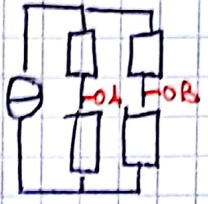
NUS 1-3

a) R_i :



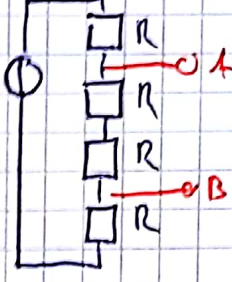
$$R_i = (2R \parallel 2R) = 10\Omega = R$$

$U_{qE}^{(1)}$:



$$U_{AB} = 0 \text{ (symmetrie)}$$

$U_{qE}^{(2)}$:

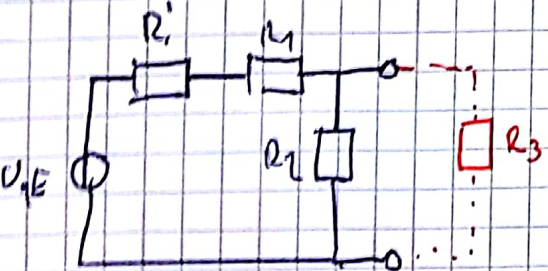


$$U_{AB} = 10V \cdot \frac{2R}{4R} = 5V = \frac{U}{2}$$

$$\Rightarrow U_{qE} = U_{qE}^{(1)} + U_{qE}^{(2)} = 0 + 5V = \underline{\underline{5V}} = \underline{\underline{\frac{U}{2}}}$$

$$I_{L2} = \frac{U_{qE}}{R_i} = \frac{U}{2R} = \underline{\underline{0,5A}}$$

b) für $U_{qE} = 6V$ und $R_{L2} = 12V$:



$$R_i = (R_2 \parallel (R_1 + R_3)) = \underline{\underline{20,28\Omega}} = R_3$$

c) $U_{LL} = U_{qE} \cdot \frac{R_2}{R_2 + R_1 + R_3} = \underline{\underline{4,73V}} \Rightarrow P = \frac{U_{LL}^2}{4R_3} = \underline{\underline{28,5mW}}$