

a)

Thevenin Eq. Cir. WRT a/b:

Remove  $R_L$ ,

$$V_{oc} = -100i \cdot 1k = -100ki = v \quad (\text{KVL on left side})$$

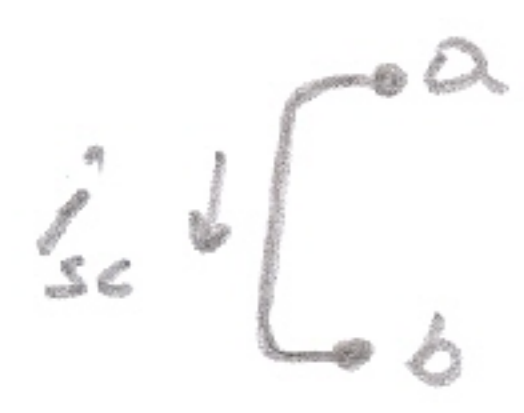
$$\begin{cases} -220 \times 10^{-3} - 10^{-3}v = i \cdot 1,2k & (\text{KVL on right side}) \end{cases}$$

$$\rightarrow -220 \times 10^{-3} + 10^{-3} \times 100ki = 1,2ki \Rightarrow 1,1k i = -220 \times 10^{-3}$$

$$i = -200 \times 10^{-6} A = -200 \mu A$$

$$\Rightarrow V_{oc} = 20V$$

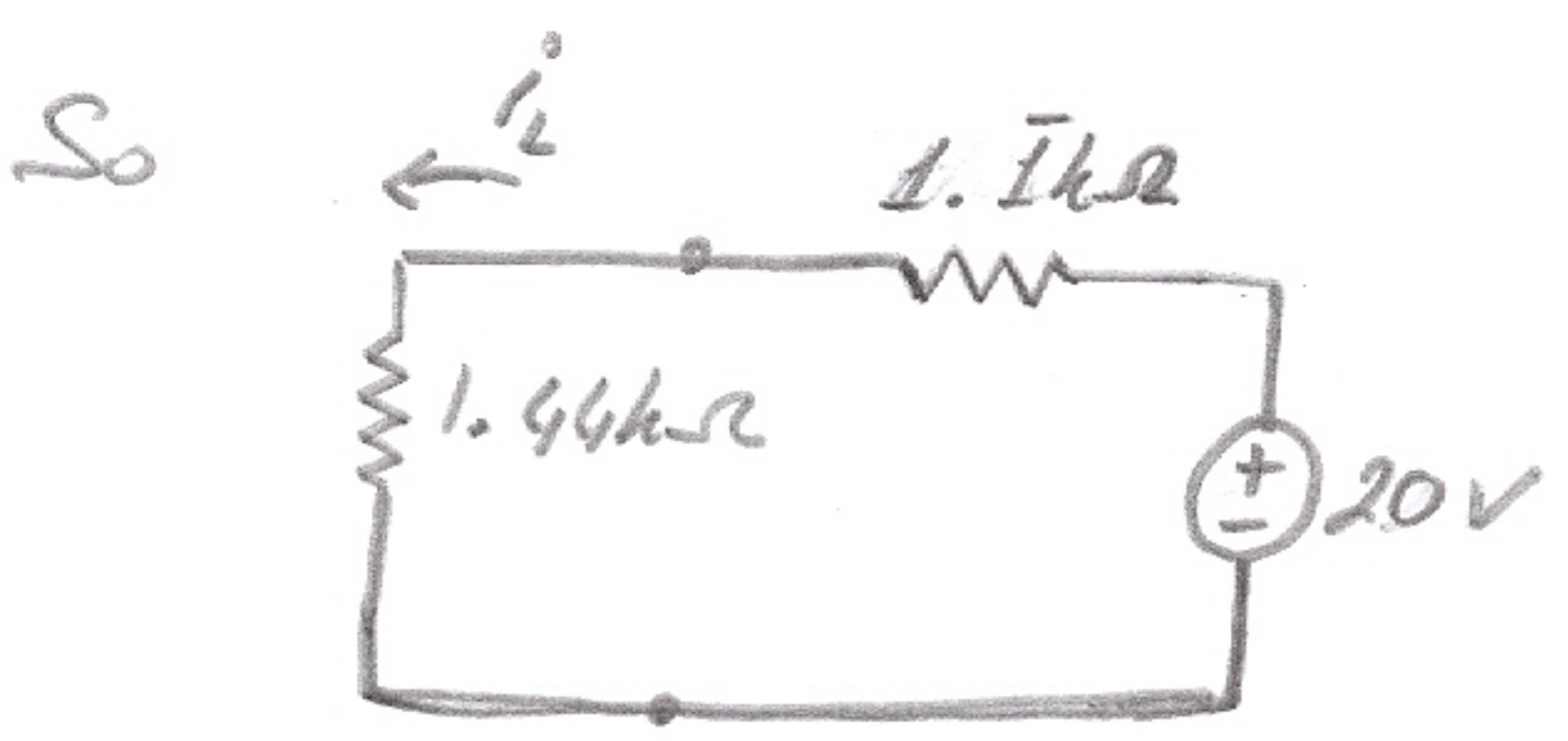
Remove  $R_L$  & short circuit a & b:



$$i_{sc} = -100i, \quad v=0 \Rightarrow i = -\frac{220m}{1,2k} = -0,18mA$$

$$\Rightarrow i_{sc} = 18mA$$

$$\Rightarrow R_{Th} = \frac{V_{oc}}{i_{sc}} = \frac{20}{18m} = 1,1k\Omega$$



$$i_L = \frac{20}{1,5k\Omega} = 12,9mA \Rightarrow P = 239,6mW$$

b) ideal ammeter has  $R_{in} = 0 \Rightarrow$  short circuit

$\Rightarrow$  it will measure  $i_{sc} = 18mA$