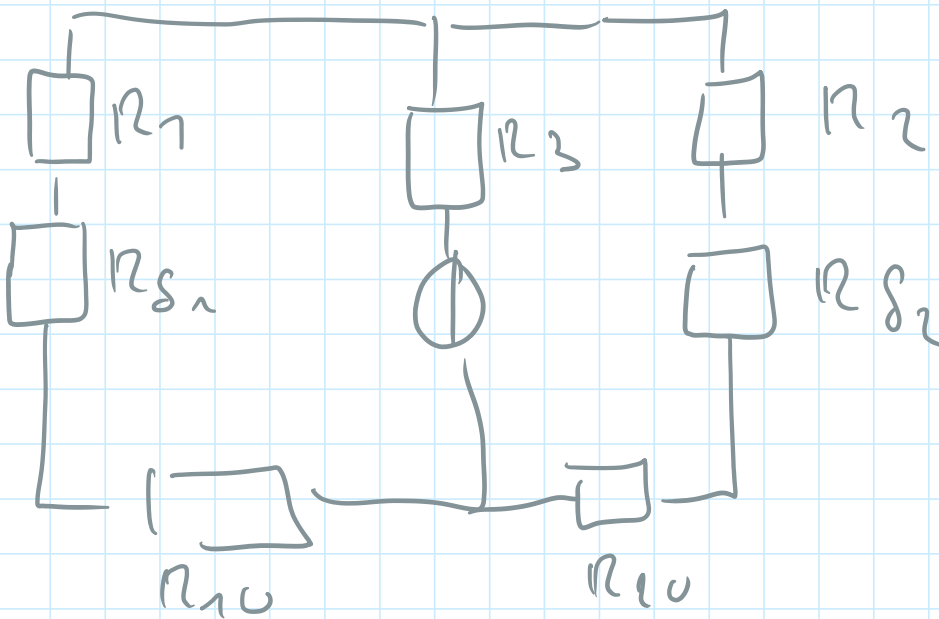


I-4

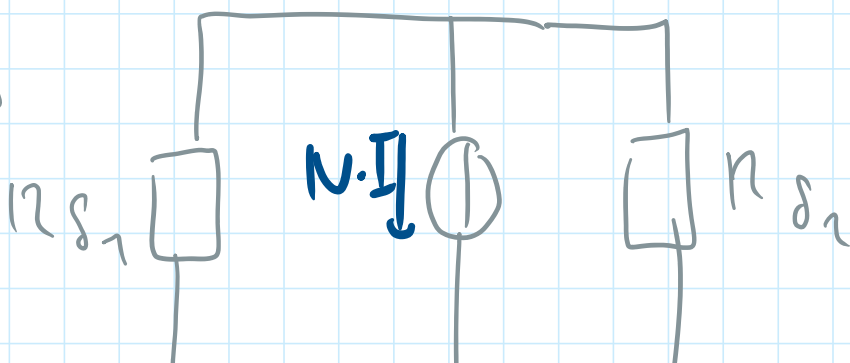
a) Modell:

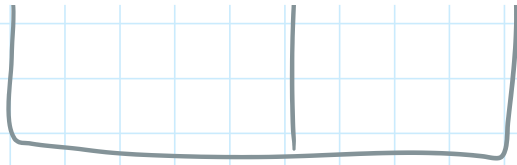


Mit: $R_1 = R_2 = R_3 = R_{10} = R_{20} \stackrel{!}{=} 0$

da $\mu_r \rightarrow \infty$

\Rightarrow





$$\text{Mit } R_{S1} = \frac{s_1}{\mu_0 \cdot a \cdot b} = \underline{\underline{6.63 \cdot 10^7 \text{ H}^{-1}}}$$

$$\text{und } R_{S2} = \frac{s_2}{\mu_0 \cdot a \cdot b} = \underline{\underline{3.979 \cdot 10^7 \text{ H}^{-1}}}$$

b) es gilt:

$$\Phi_1 = \frac{U \cdot I}{R_{S1}}$$

$$\text{und } \Phi_2 = \frac{U \cdot I}{R_{S2}}$$

$$\Rightarrow \Phi_2 > \Phi_1$$

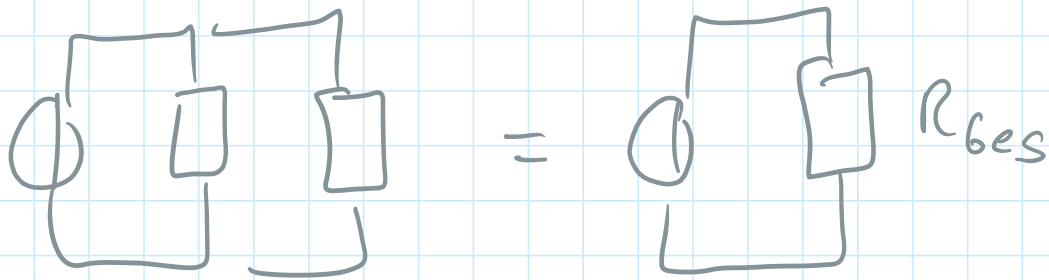
$$\Rightarrow \Phi_2 = B_i A = U \cdot I \cdot \frac{\mu_0 \cdot A}{s_1}$$

$$\Rightarrow \beta_2 = \frac{V \cdot I \cdot \mu_0}{\delta_2} = \beta_{sat}$$

$$\hookrightarrow V = \frac{\beta_{sat} \cdot \delta_2}{I \cdot \mu_0} = 17.9$$

$$\hookrightarrow V_{max} = \underline{\underline{17}}$$

c)



$$\text{mit } R_{ges} = (R_{\delta_1} \parallel R_{\delta_2})$$

$$\Rightarrow R_{ges} \approx 2.487 \cdot 10^7 \text{ } \Omega^{-1}$$

$$\Rightarrow L = \frac{V \cdot L}{R_{ges}} = \underline{\underline{17.62 \cdot 10^{-11} \text{ } \Omega^{-1}}}$$

a) δ_1 kleiner

δ_1 kleiner als δ_2

$$\hookrightarrow B_1 > B_2 = B_{\text{sat}}$$

\hookrightarrow Material sättigt.