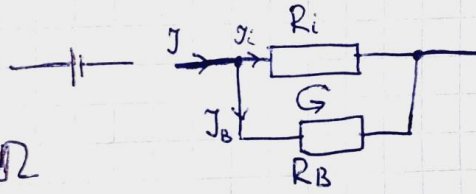


N5

a)

$$R_i = 92 \Omega$$



$$U_B = U_i \quad \frac{J}{J_i} = 5$$

1. k.z.  $J = J_i + J_B$

2. k.z.  $U_B - U_i = J_B R_B - J_i R_i = 0$

$$J_B = \frac{J_i R_i}{R_B}$$

$$J = J_i + \frac{J_i R_i}{R_B} = J_i \left(1 + \frac{R_i}{R_B}\right)$$

$$\frac{J}{J_i} = \frac{J_i \left(1 + \frac{R_i}{R_B}\right)}{J_i} \Rightarrow \frac{R_i}{R_B} = 5 - 1$$

$$R_B = \frac{R_i}{5 - 1}$$

$$R_B = \frac{92}{4} = 0,05 \Omega$$

b)  $R_i = 100 \Omega$ ,  $U_1 = 10V$ ,  $U_2 = 100V$

$$U = IR \quad \frac{U_1}{U_2} = \frac{10}{100} = \frac{J_1 R_1}{J_2 R_2} = 0,1$$

$$\frac{U_2}{U_1} = 10 = \frac{J_2 R_2}{J_1 R_i} = \frac{J_2 (R_i + R)}{J_1 R_i} = 1 + \frac{R}{R_i} = 1 + 9$$

$$J_2 = J_1$$

$$R = 900 \Omega$$

přidáme rezistor o  $900 \Omega$