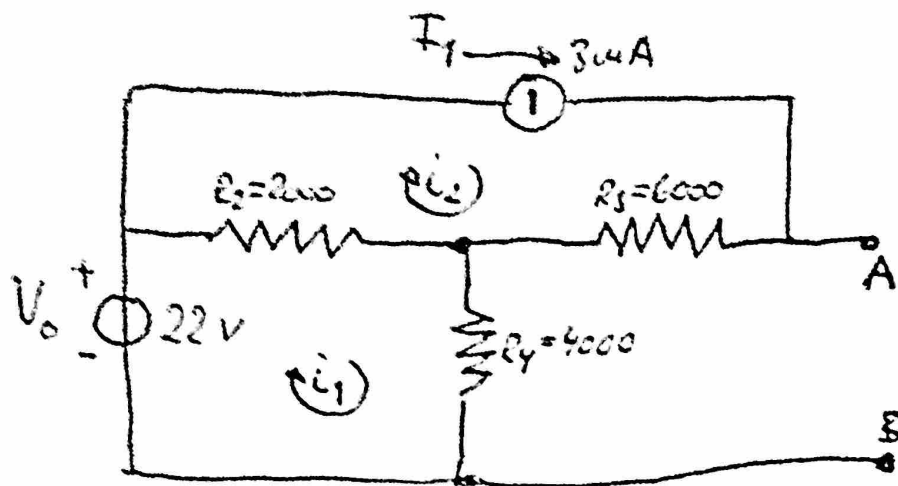


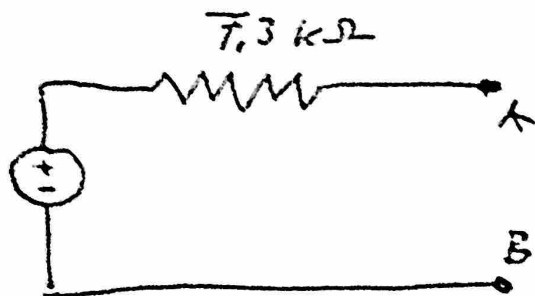
PROBLEM 4



$$R_{TH} = 2000 // 4000 + 6000$$

$$R_{TH} = \frac{R_2 \cdot R_4}{R_2 + R_4} = \frac{2000 \cdot 4000}{2000 + 4000} = \frac{8000000}{6000} + 6000$$

$$R_{TH} = 1333 \approx 1,3 \text{ k}\Omega + 6000 = 7,3 \Omega$$



$$-V_0 + R_2(i_1 - i_2) + R_4 \cdot i_1 = 0$$

$$-22 + 2000(i_1 - 0,003) + 2400 \cdot i_1 = 0$$

$$4400 i_1 = 28$$

$$i_1 = \frac{28}{4400}$$

$$i_1 = 0,0063 \approx 6,3 \mu\text{A}$$

$$V_{TH} = 0,0063 \cdot \frac{R_2 \cdot R_4}{R_2 + R_4} \Rightarrow 0,0063 \cdot \frac{6000 \cdot 4000}{6000 + 4000}$$

$$V_{TH} = 0,0063 \cdot 2400$$

$$V_{TH} = 15,12 \text{ V}$$