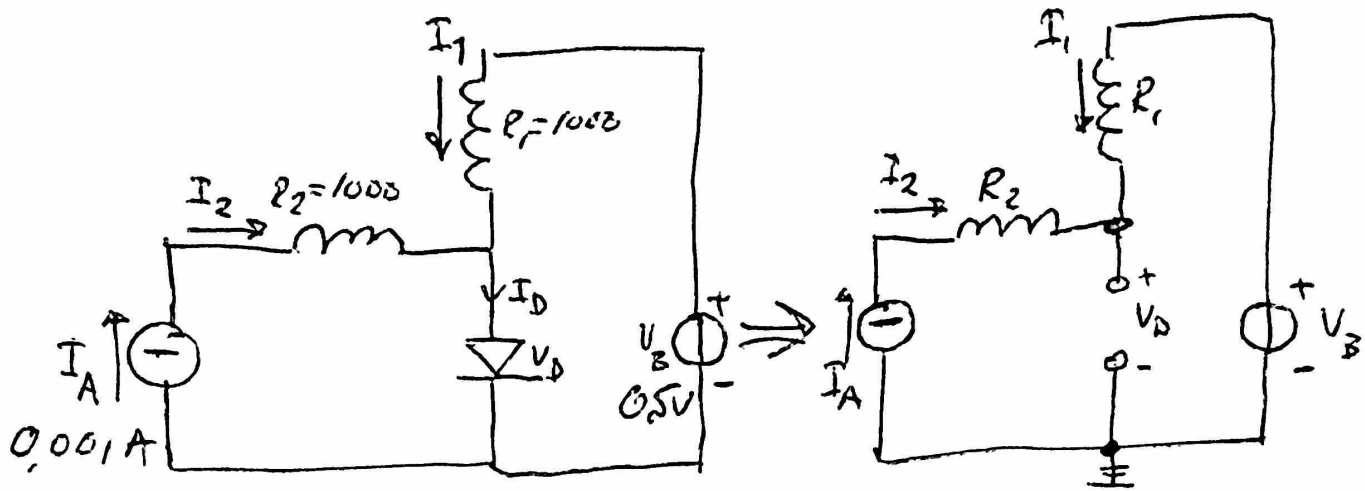


PROBLEM 3



$$\text{KVL} \Rightarrow V_B - R_1 \cdot I_1 + R_2 \cdot I_2 = 0$$

$$0.5 - 1000 \cdot I_1 + 1000 \cdot 0.001 = 0 \Rightarrow I_1 = 0.0015 \text{ A}$$

$$V_1 = 1000 \cdot 0.0015 \Rightarrow V_1 = 1.5 \text{ V}$$

$$V_D = V_B - V_1 \Rightarrow 0.5 - 1.5 = -1.0 \text{ V}$$

$$V_D > V_T \Rightarrow I_D > 0$$

$$I_A = I_2$$

$$\text{KCL} = I_1 + I_2 = I_D \Rightarrow 0.0015 + 0.001 = 0.0025 \text{ A}$$

$$I_D = \underline{\underline{2.5 \mu \text{ A}}}$$