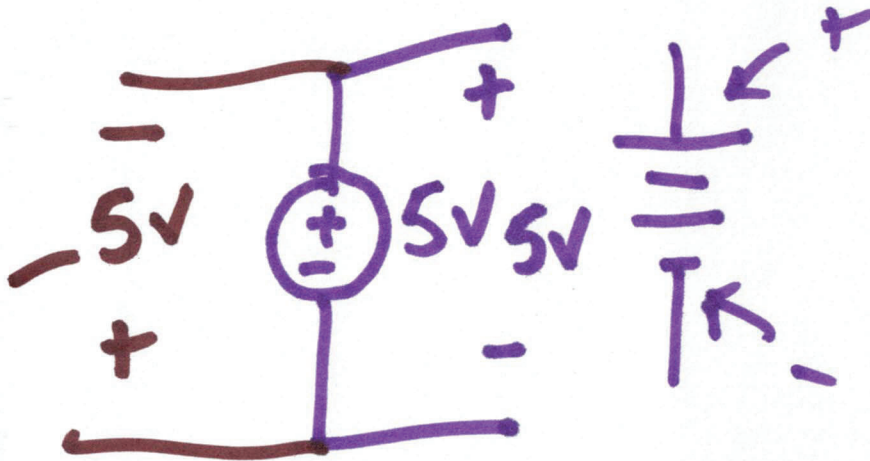
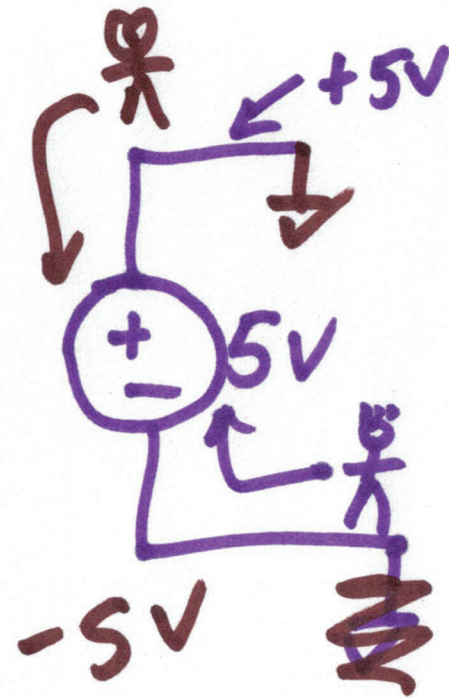
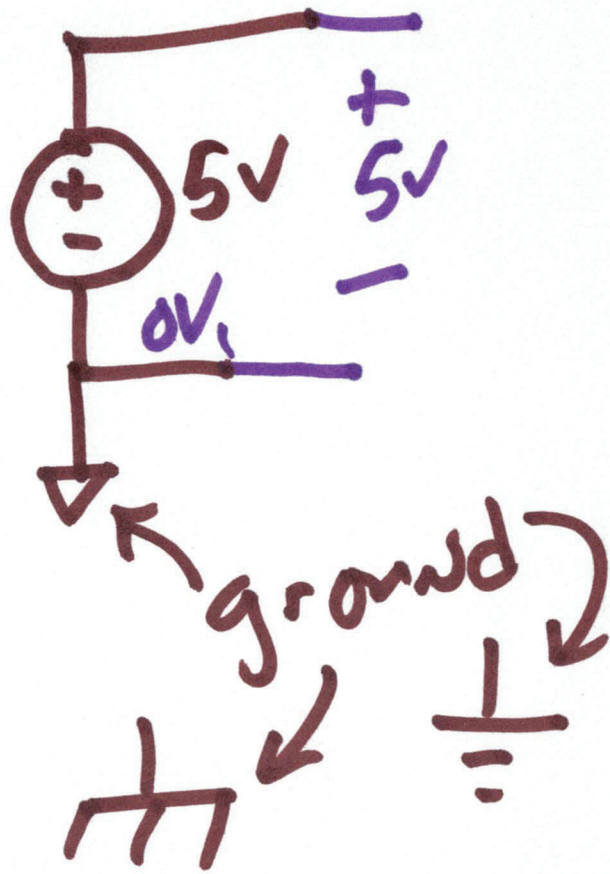


# EE 220 Circuits I

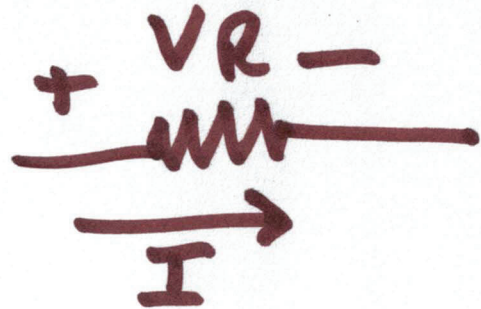
Aug. 29, 2022

Lecture 1

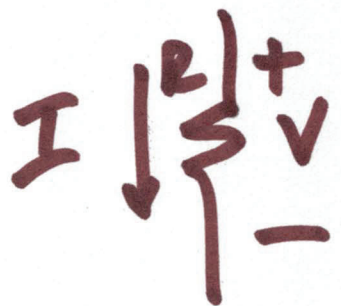




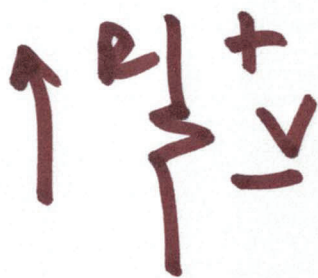
# Ohm's Law



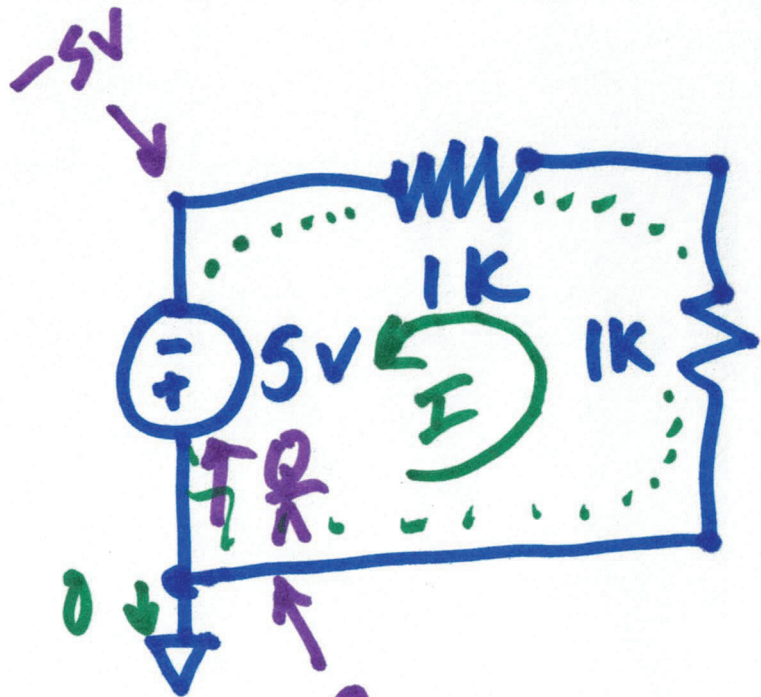
$$V = I \cdot R$$



$$\rightarrow V = I \cdot R$$

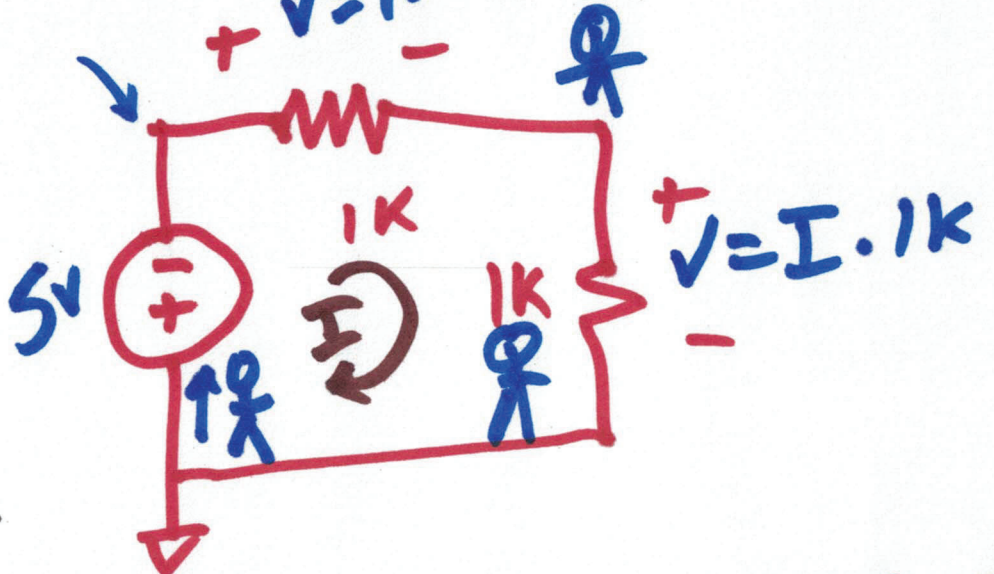


$$\begin{aligned} \rightarrow V &= (-I) \cdot R \\ &= -IR \\ &= I \cdot (-R) \end{aligned}$$

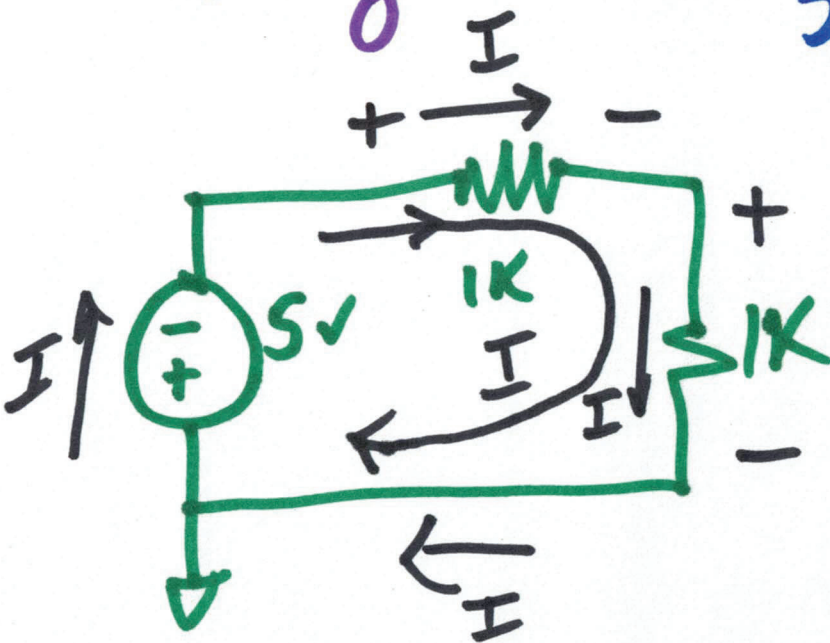


$$V = I \cdot R$$

$$V = 1k \cdot I$$



$$V = I \cdot 1k$$

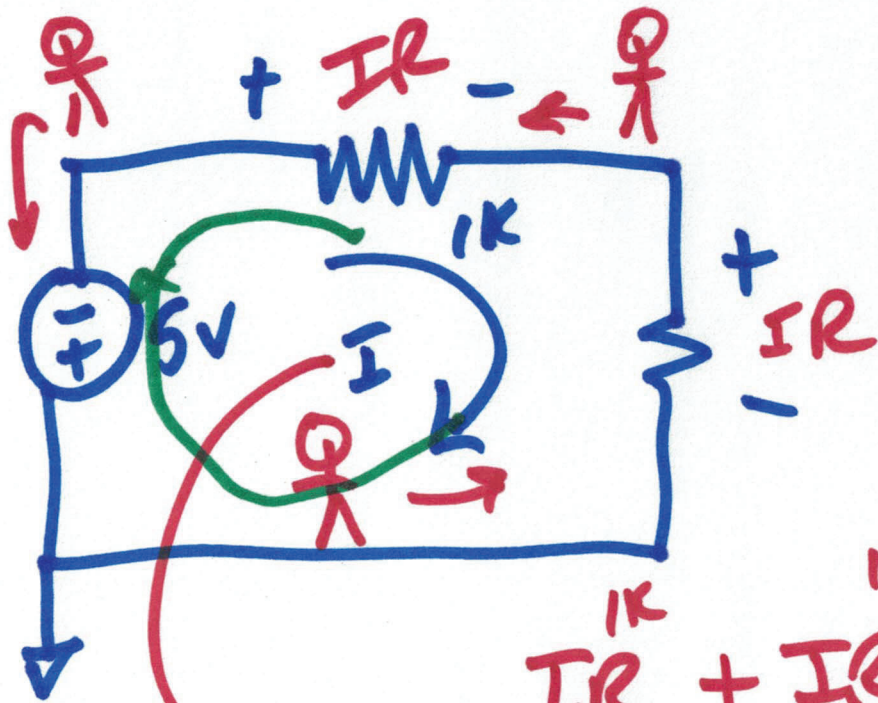


$$-5V - 1k \cdot I - 1k \cdot I = 0$$

$$I = \text{Amps} = \frac{\text{Coulombs}}{\text{s}}$$

$$V = \text{Volts}$$

$$R = \text{Res. } \Omega \text{ } \omega = \text{s}$$



$$V = I \cdot R$$

$$IR^{1k} + IR^{2k} + 5V = 0$$

$$5V = -2k \cdot I$$

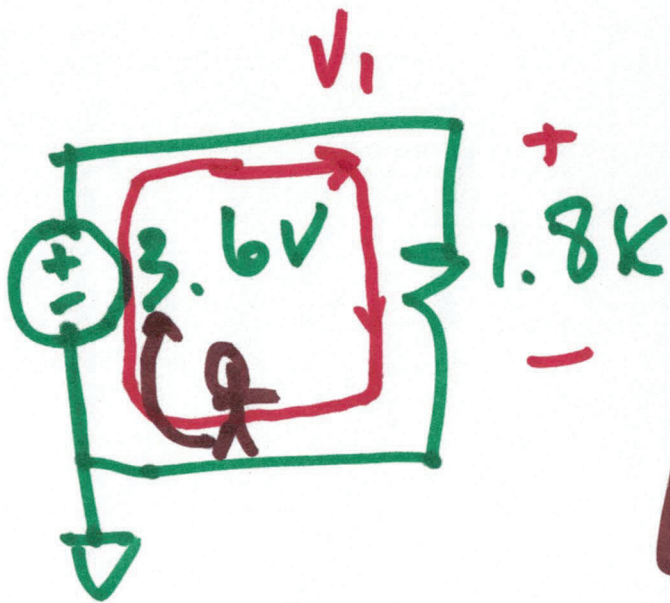
$$I = -2.5 \mu A$$

$$I = -\frac{5}{2k} = -2.5 \mu A$$

7,000  
2k

k = 10<sup>3</sup>  
1000

5)

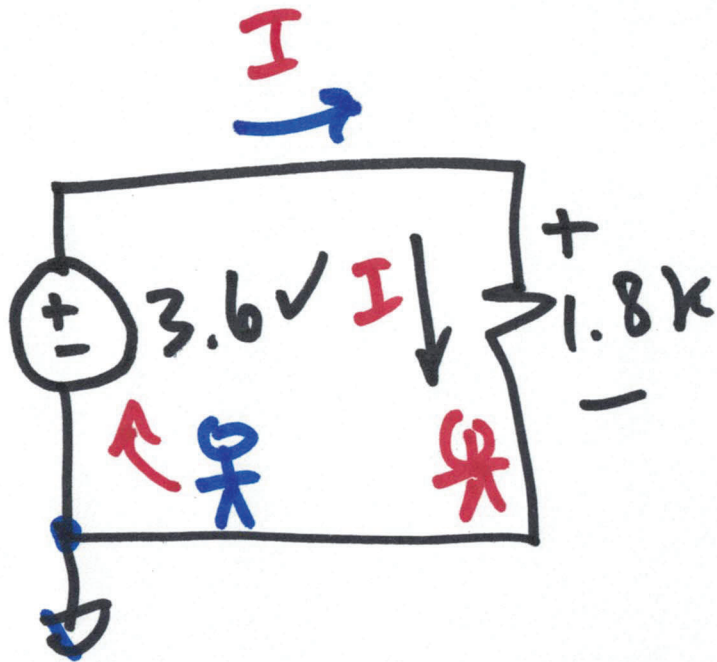


$$V = I \cdot R$$

A diagram of a resistor with current  $I$  flowing through it and voltage  $V$  across it.

$$V_1 = 3.6V$$

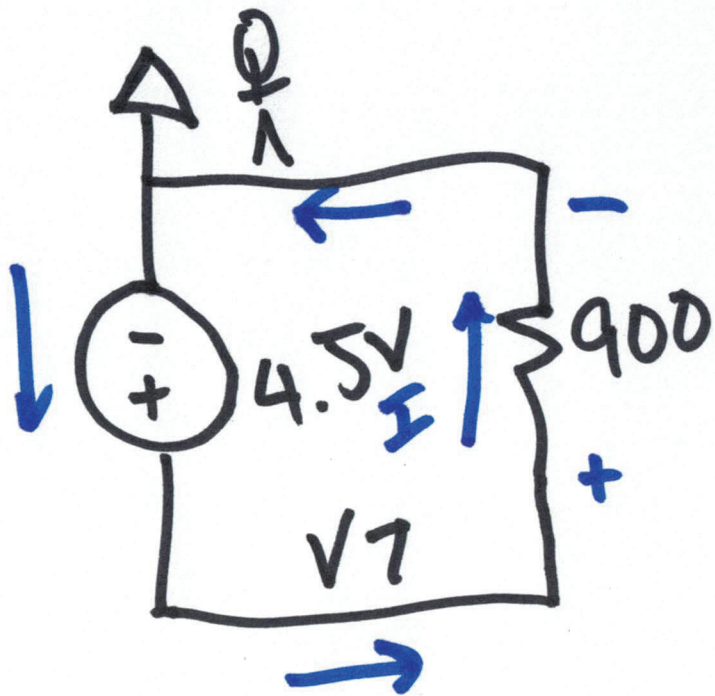
$$\frac{1}{k} = \frac{1}{10^3} = 10^{-3} = \mu$$



$$3.6 - I \cdot 1.8k = 0$$

$$I = \frac{3.6}{1.8} \mu A$$

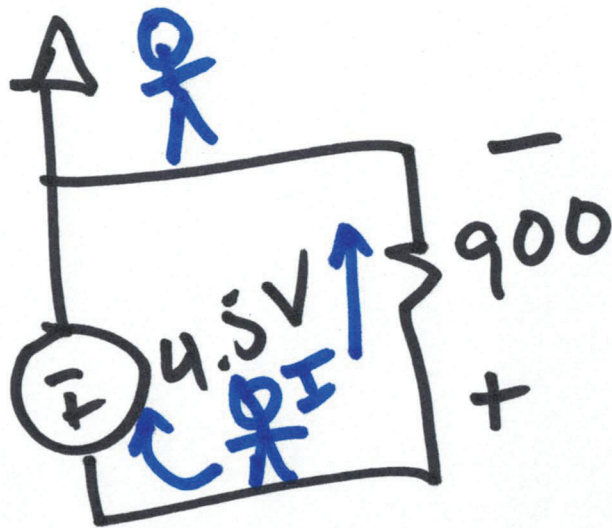
$$I = 2 \mu A$$

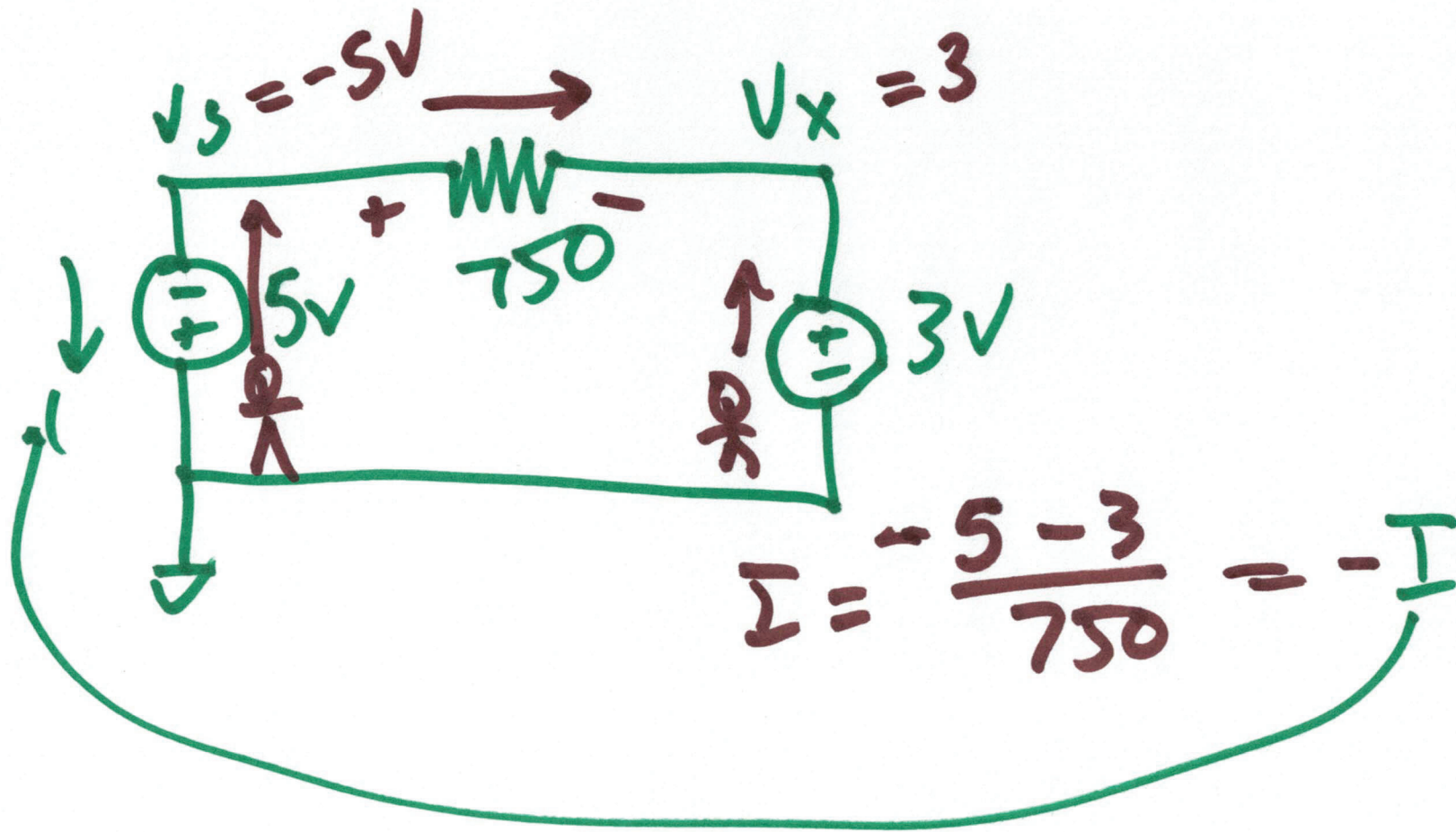


$$V_7 = +4.5V$$

$$+900 \cdot I - 4.5 = 0$$

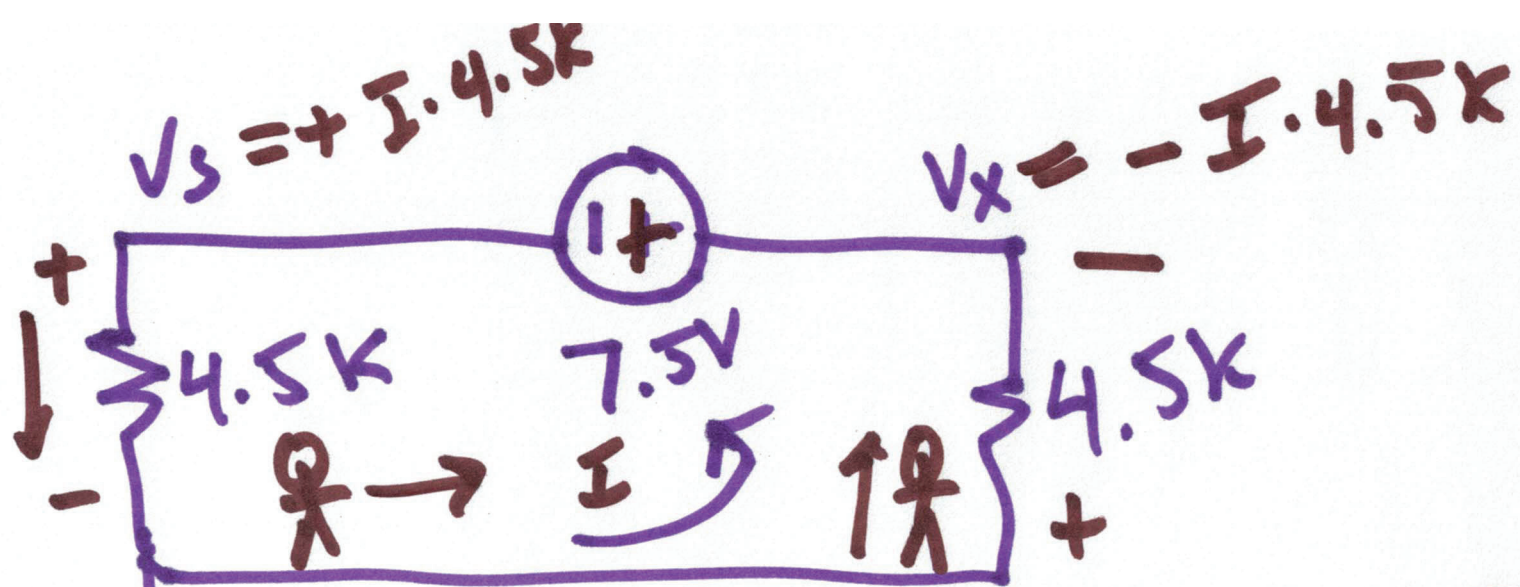
$$I = \frac{4.5}{900} = 5\mu A$$





8)





$$0 = -I \cdot 4.5k - 7.5 - I \cdot 4.5k$$

$$I =$$

9)