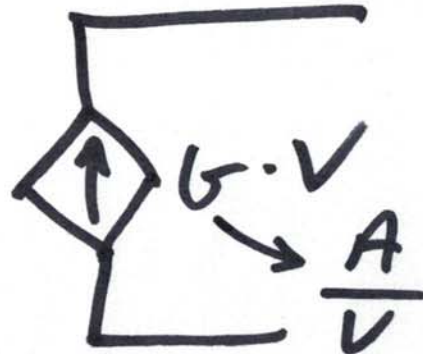
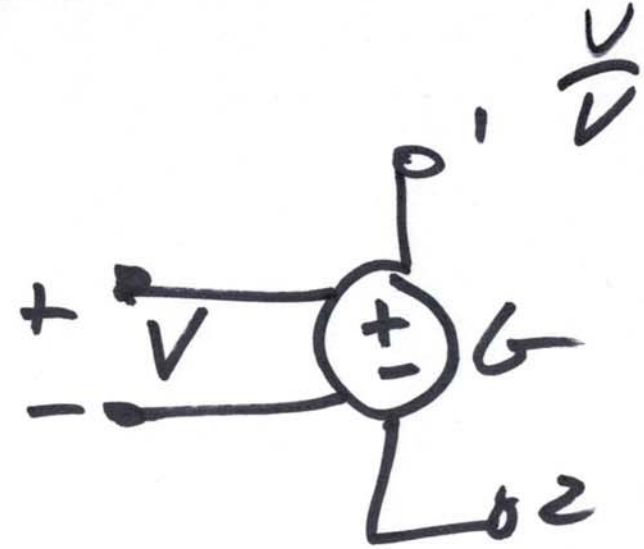
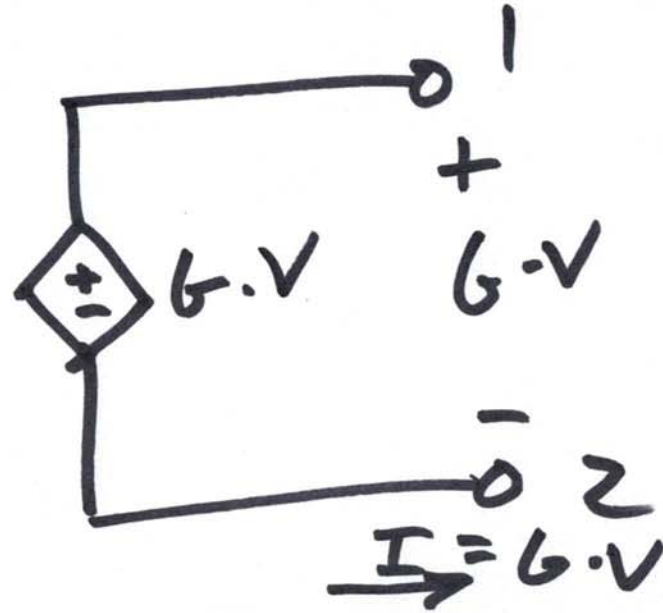


# EE 221 CIRCUITS II

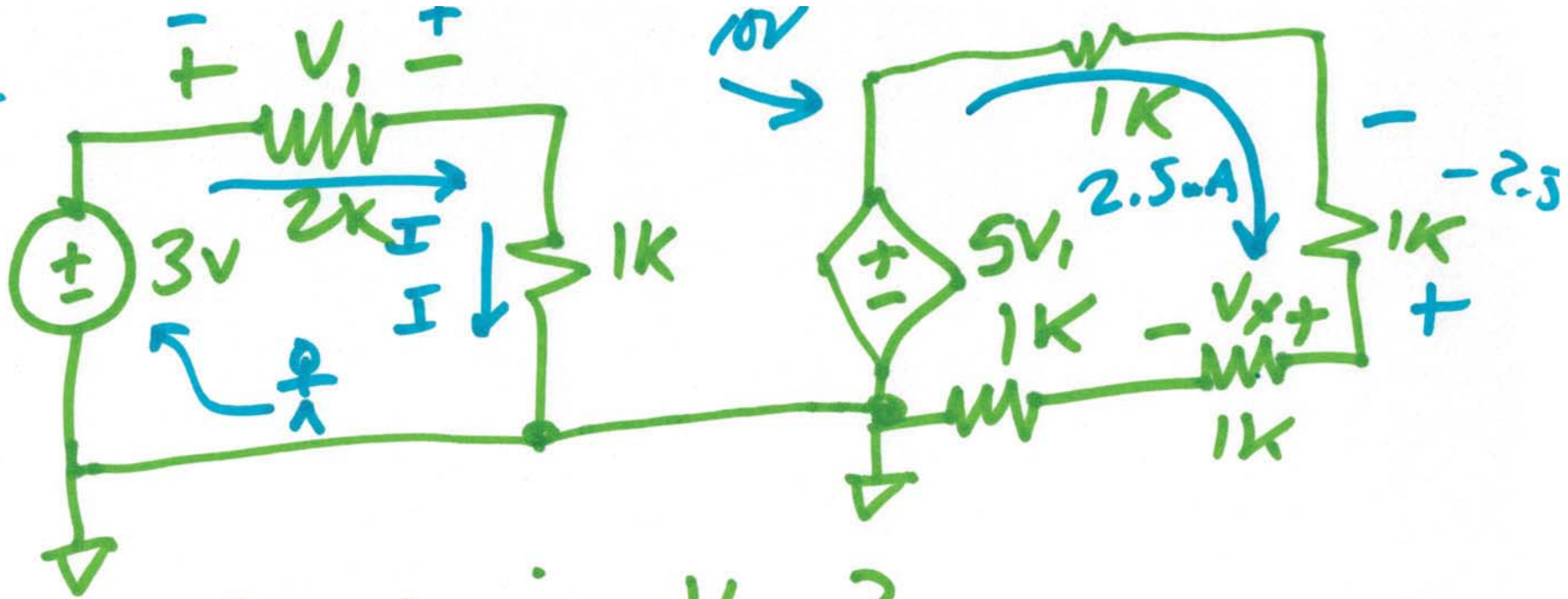
## Lecture 3

JAN. 29, 2020



1)

$V = IR$



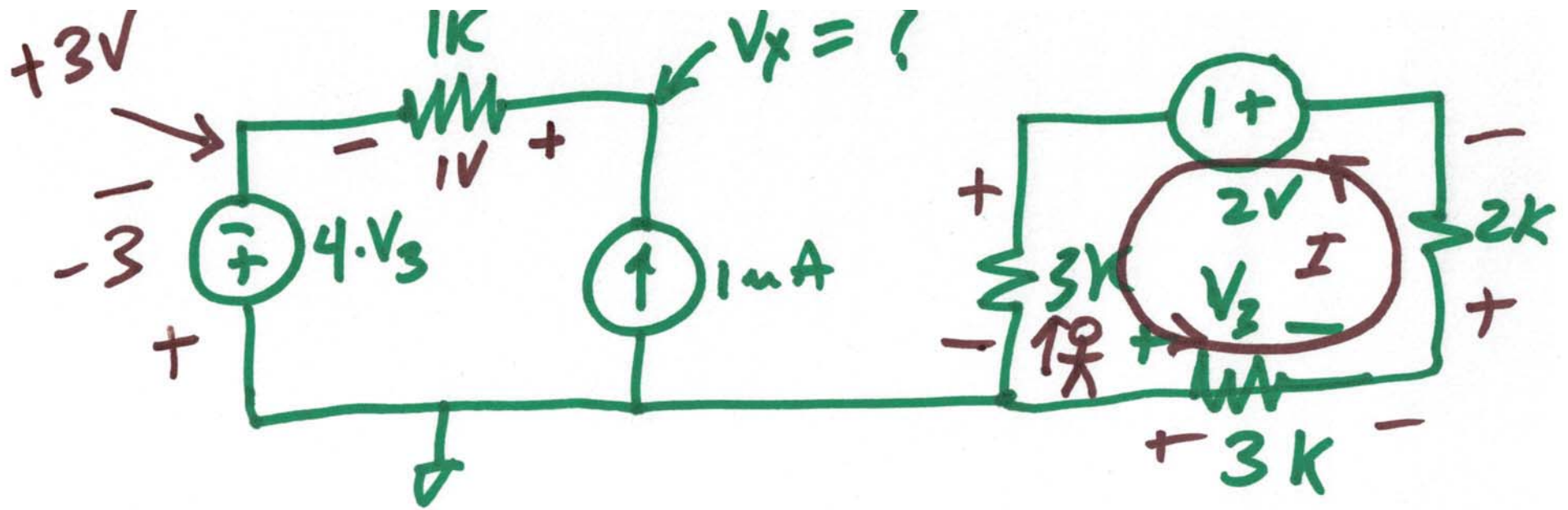
What is  $V_x$ ?

$$3 - 2kI - I1k = 0, I = 1\mu A$$

$$V_1 = 1\mu A \cdot 2k = 2V = V_1$$

$$V_x = 2.5V$$

2)

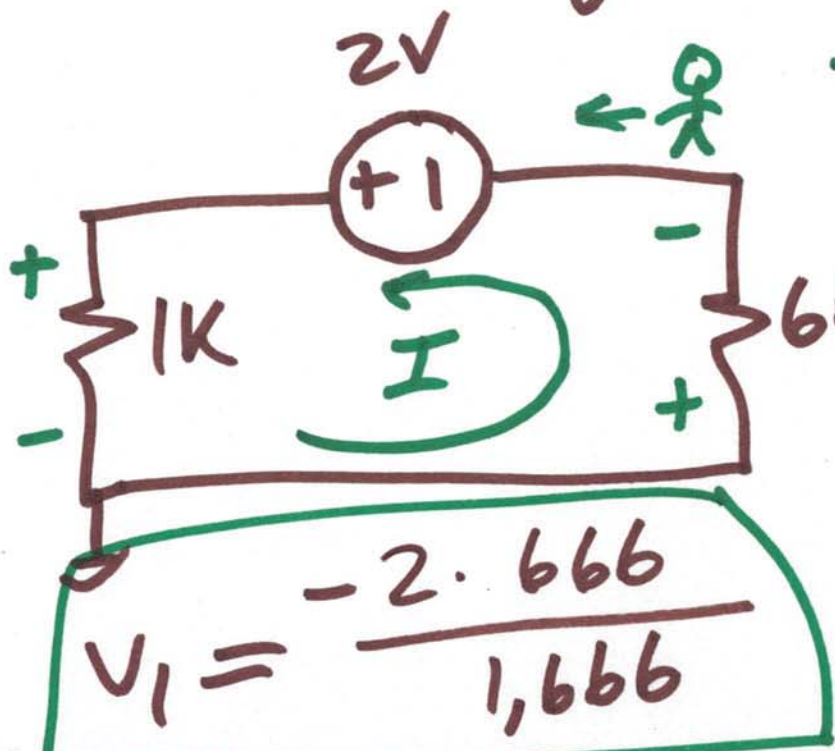
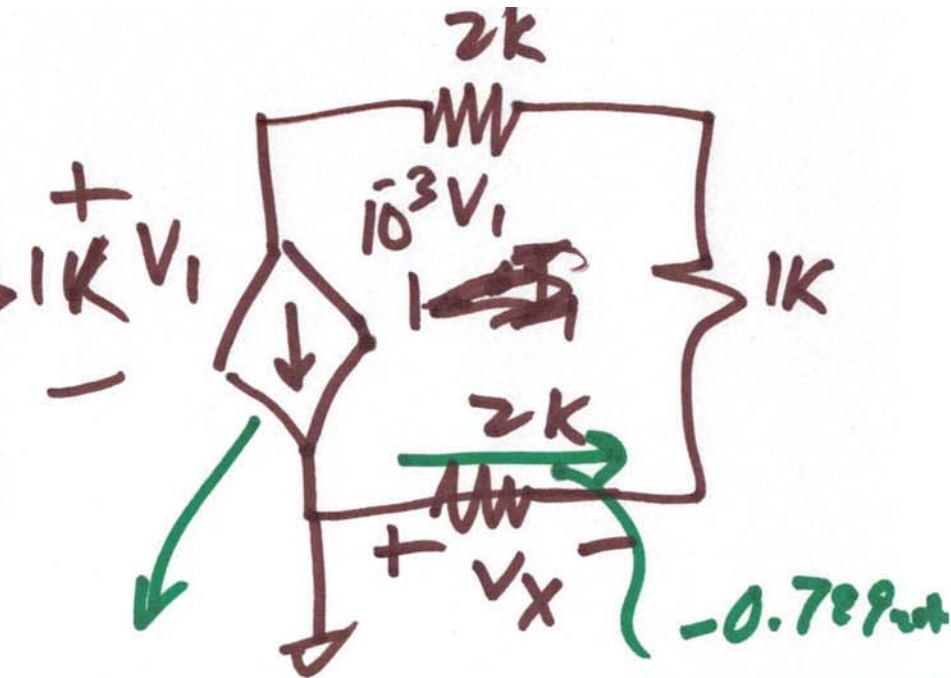
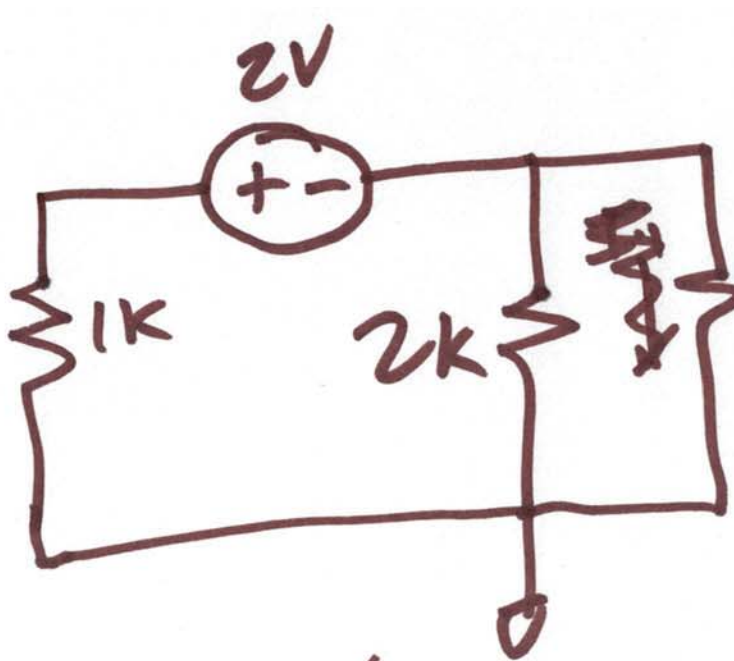


$$0 = 3k \cdot I + 2 + 2k \cdot I + 3k I V_3 = I \cdot 3k$$

$$= 8k \cdot I + 2 = 0, \quad I = -250 \mu A$$

$$V_x = 3 + 1 = \boxed{4V = V_x}$$

$$\boxed{V_3 = -750 \mu V}$$



$$V_1 = \frac{-2 \cdot 666}{1,666}$$

$$\rightarrow 0.799 \mu A \quad \boxed{V_x = -1.598V}$$

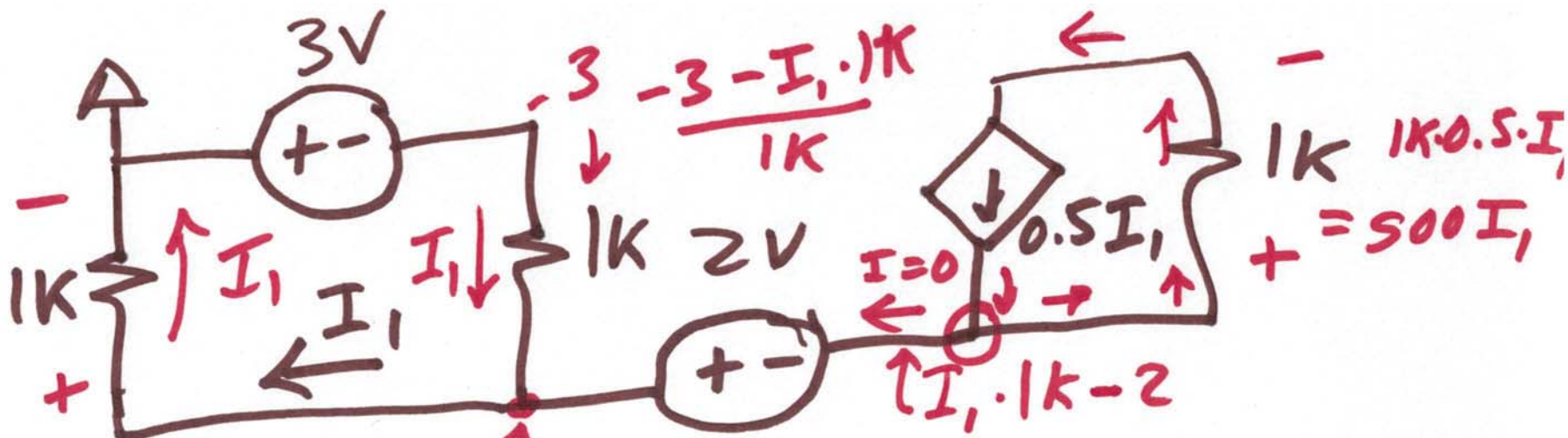
$$666 V_1 = I \cdot 666$$

$$2 - 1k \cdot I - I \cdot 666 = 0$$

$$I = \frac{2}{1666}$$

$$-0.799 = V_1$$

4)

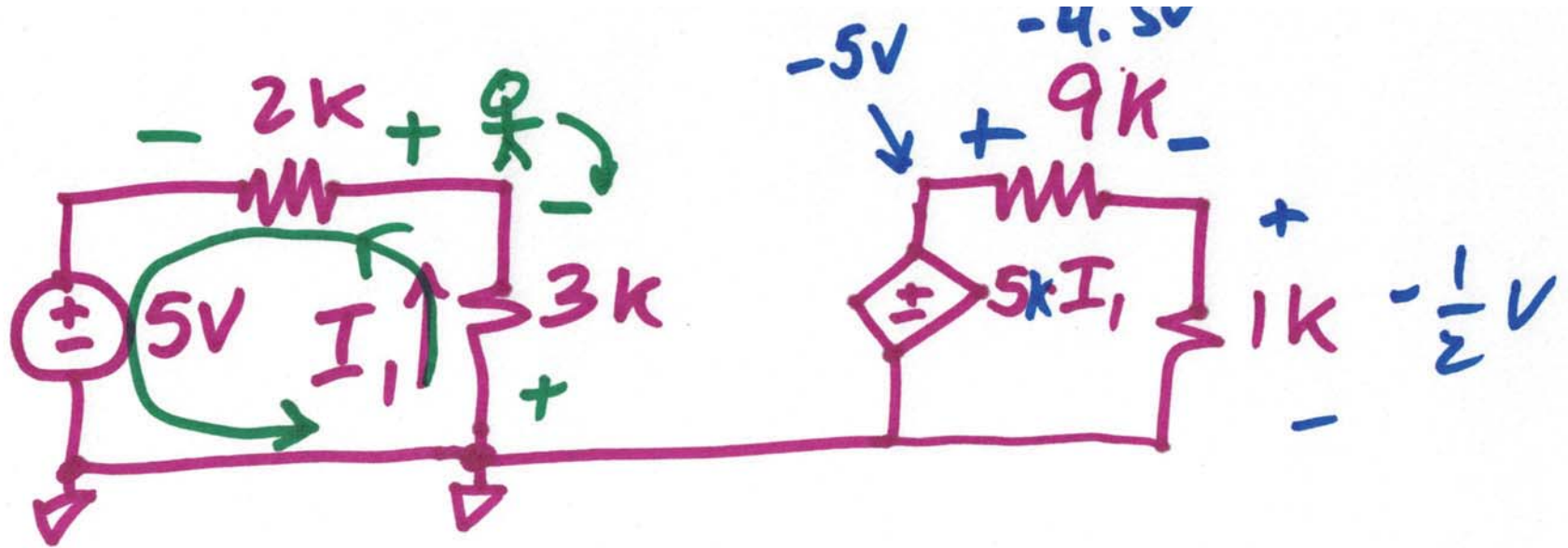


$$I_1 \cdot 1k$$

$$I_1 = \frac{-3 - I_1 \cdot 1k}{1k}$$

$$2kI_1 = -3$$

$$I_1 = -1.5 \mu A$$



$$3kI_1 + 5 + 2kI_1 = 0$$

$$I_1 = -1 \mu A$$

$$-5 \cdot \frac{1k}{9k+1k} = -\frac{1}{2}$$

6)