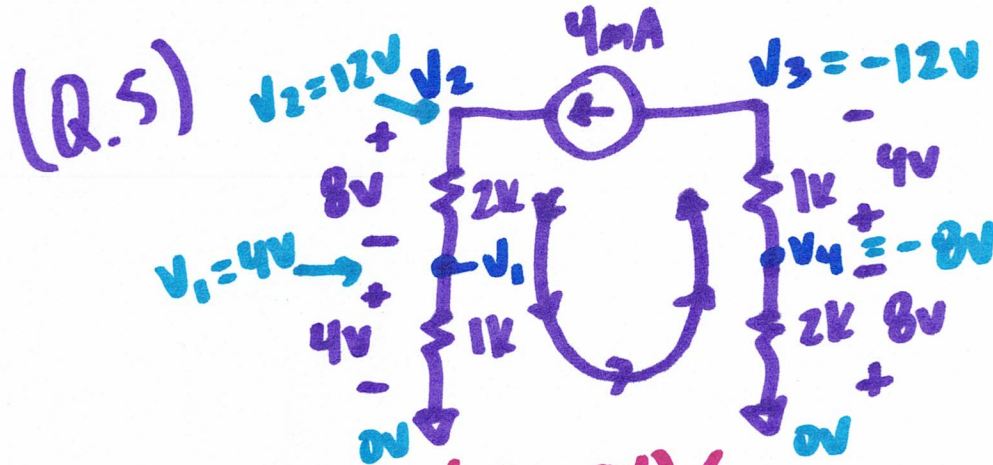


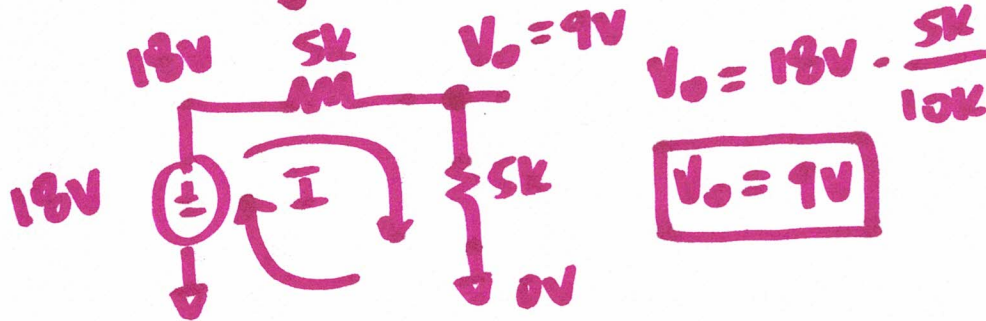
EE 220: Circuits I

(Lecture 7 Remark)



$$I = \frac{(18V - 9V)}{5k} = \frac{9V}{5k} = 1.8mA \quad \checkmark$$

HW4: 1c

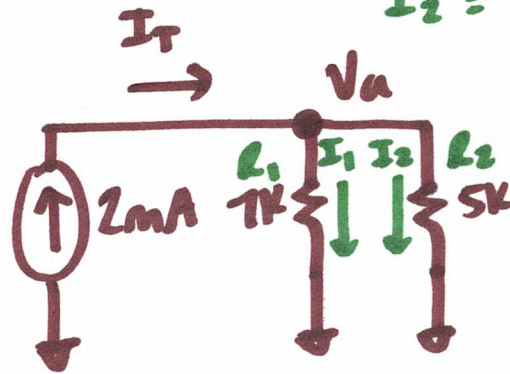


$$v_0 = 18V \cdot \frac{5k}{10k}$$

$$\boxed{v_0 = 9V}$$

$$I = \frac{9V - 0V}{5k} = 1.8mA \quad \checkmark$$

HW4: 2A



$$I_1 + I_2 = I_T$$

$$I_2 = 2\text{mA} - 0.833\text{mA} = 1.167\text{mA}$$

$$\text{or } I_2 = 2\text{mA} \left(\frac{7\text{k}}{12\text{k}} \right) = 1.167\text{mA}$$

$$I_1 = I_T \left(\frac{R_2}{R_1 + R_2} \right)$$

$$I_1 = 2\text{mA} \left(\frac{5\text{k}}{12\text{k}} \right)$$

$$I_1 = 0.833\text{mA}$$

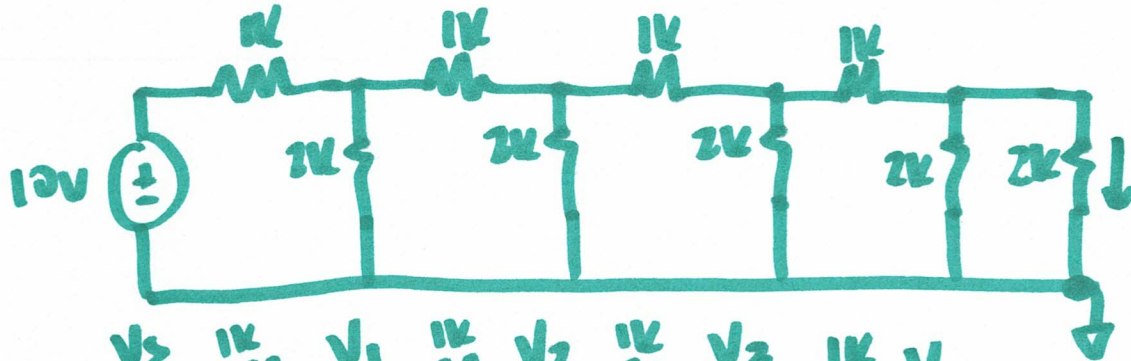
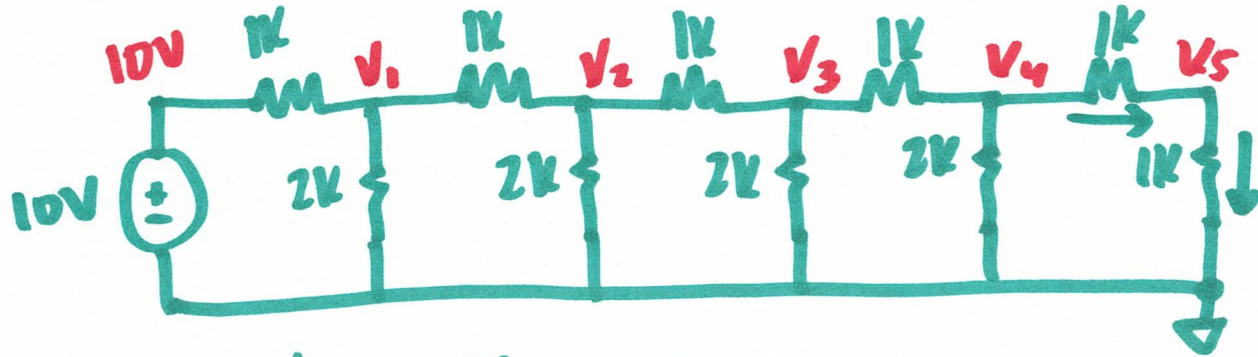
$$I_2 = 1.167\text{mA}$$

$$V_a = 7\text{k} \cdot I_1 = 5\text{k} \cdot I_2$$

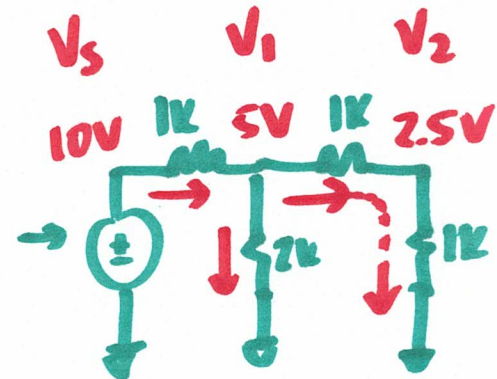
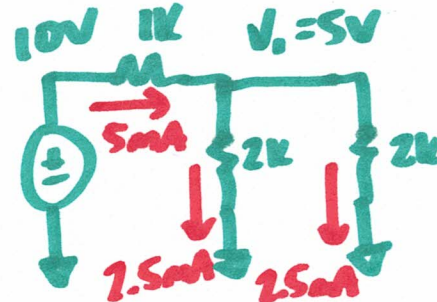
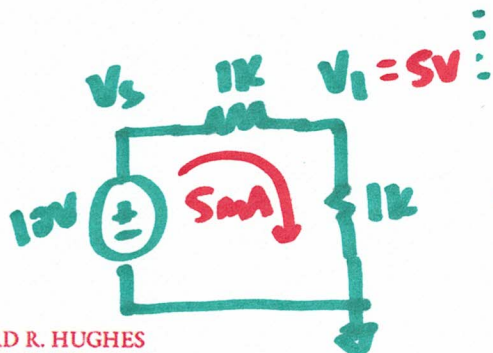
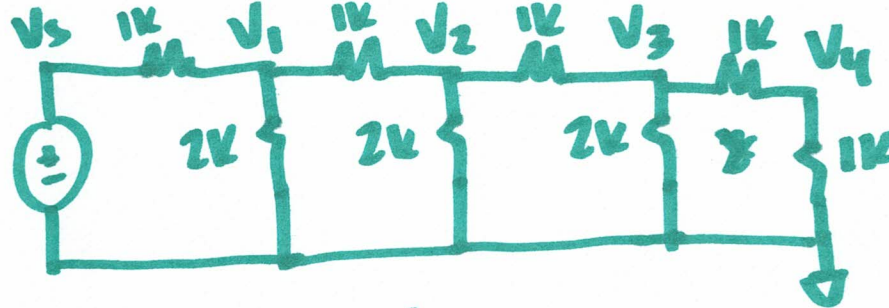
$$= 7\text{k} \cdot 0.833\text{mA} = 5\text{k} \cdot 1.167\text{mA}$$

$$V_a = 5.83\text{V} = 5.833\text{V}$$

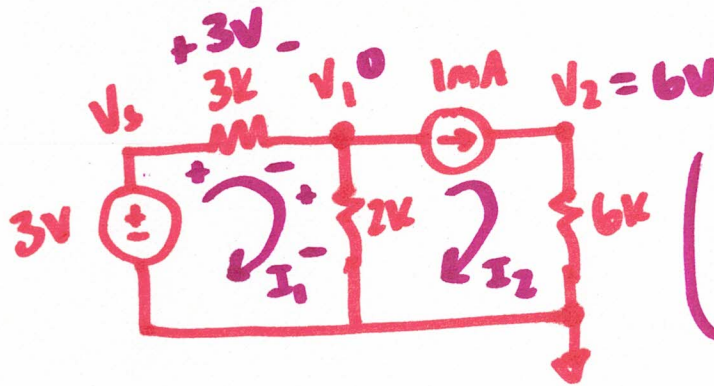
HW5:2



$$\frac{2k \cdot 2k}{2k + 2k} = 1k$$



Mesh analysis example



$$\textcircled{1} +3V - I_1 \cdot 3k - (I_1 - I_2) \cdot 2k = 0$$

$$\textcircled{2} I_2 = 1mA$$

$$3V - I_1 \cdot 3k - I_1 \cdot 2k + I_2 \cdot 2k = 0 \quad | \quad I_2 = 1mA$$

$$3V - I_1 \cdot 5k + 2V = 0$$

$$\frac{5V}{5k} = I_1 \cdot \frac{5k}{5k}$$

$$I_1 = 1mA$$

$$I_2 = 1mA$$

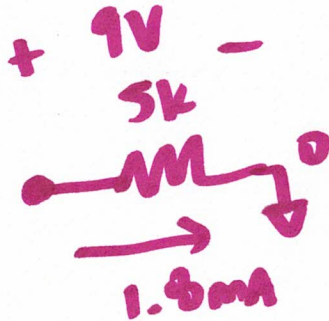
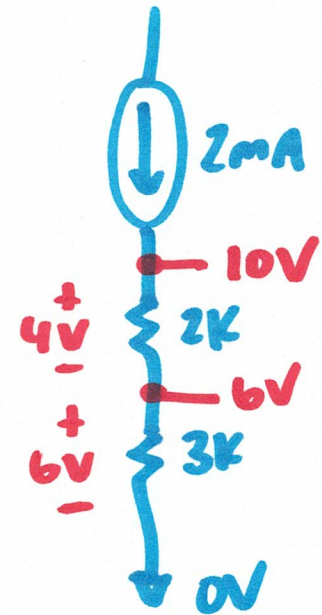
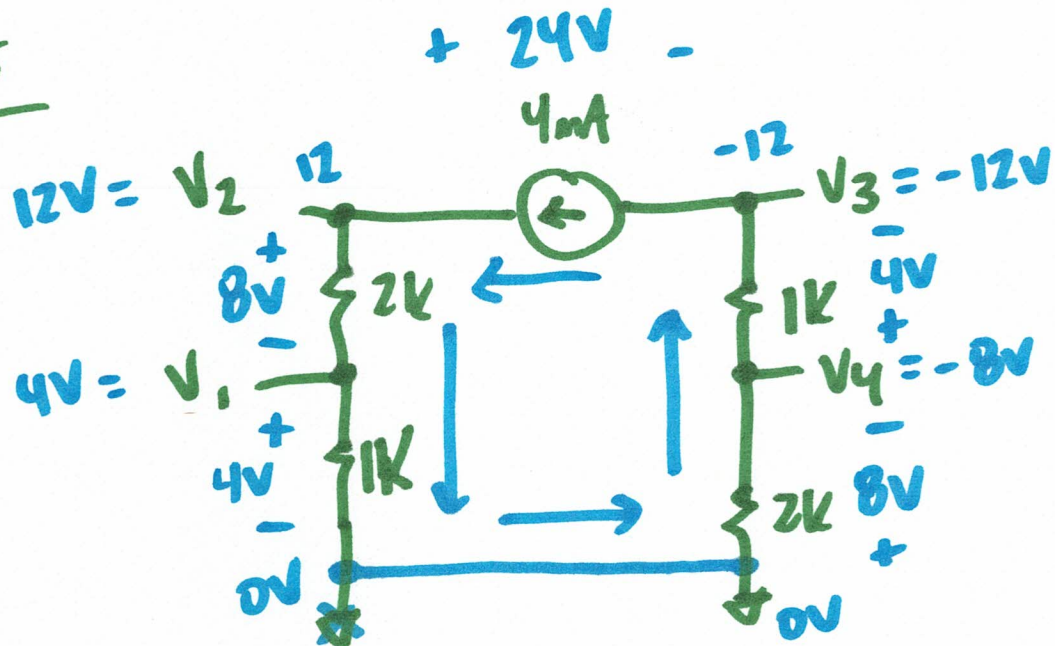
$$V_s = 3V$$

$$V_x = 0V = v_1$$

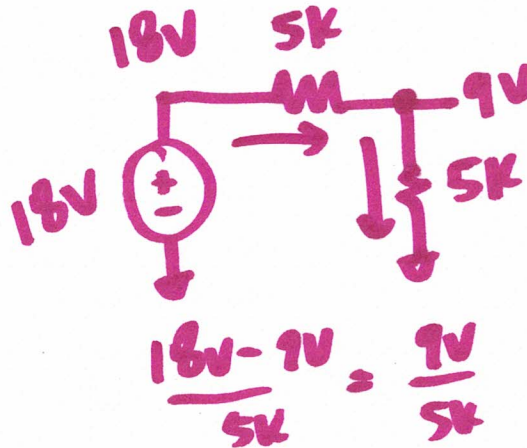
$$V_y = 6V = v_2$$

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Quiz 5



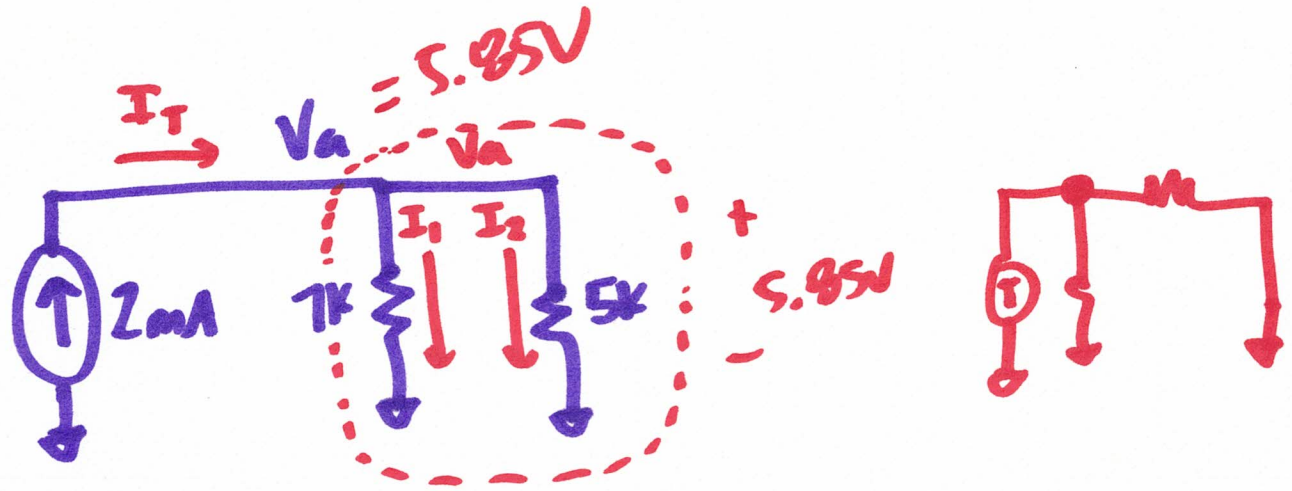
HW4: 1C



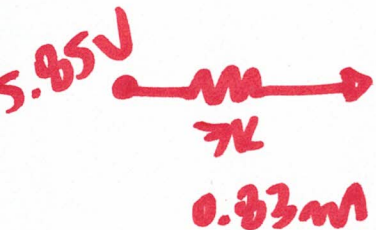
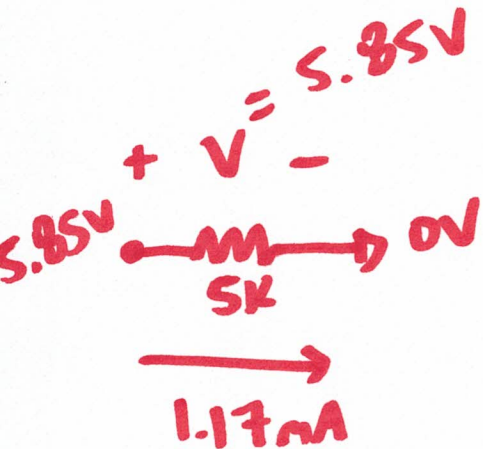
$V = I \cdot R$

V_1
 V_2
 $I = \frac{V_1 - V_2}{R}$

HU4:2A



$$I_T = I_1 + I_2 = 2\text{mA}$$

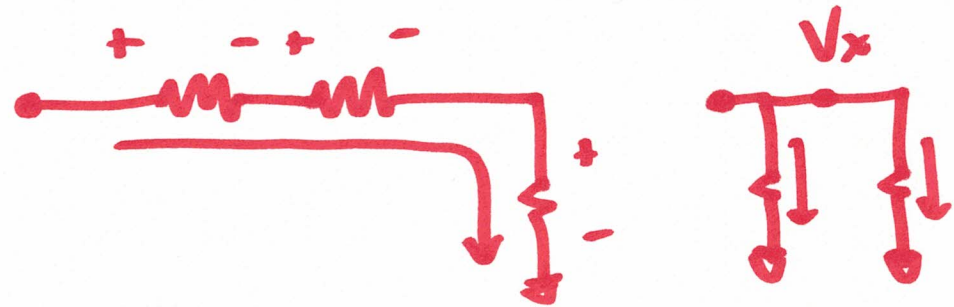


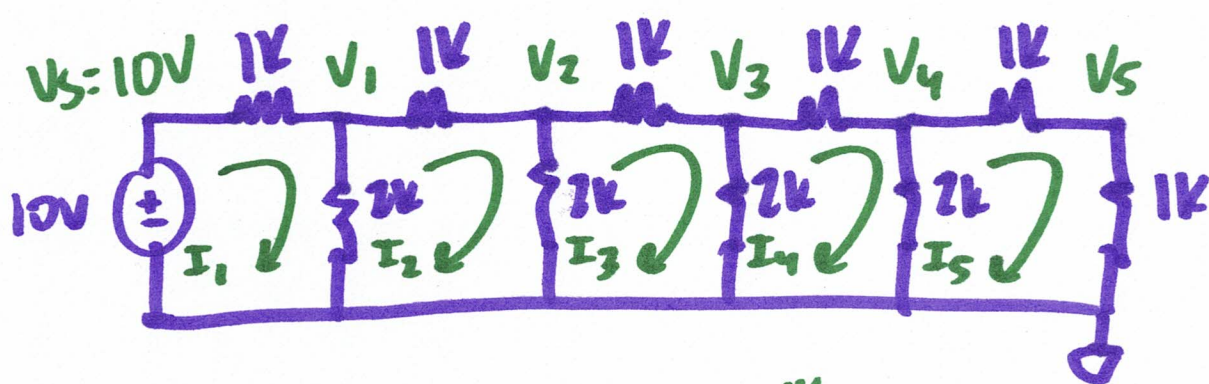
~~$I_2 = 2\text{mA} \cdot \frac{7\text{k}}{12\text{k}} = 0.83$~~

$$I_1 = 2\text{mA} \cdot \frac{5\text{k}}{12\text{k}} = 0.83\text{mA}$$

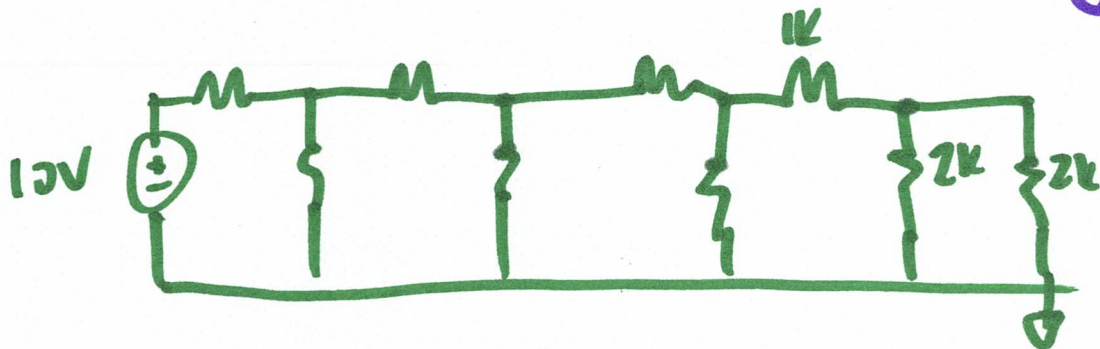
$$I_2 = 2\text{mA} - 0.83\text{mA} = 2\text{mA} \cdot \frac{7\text{k}}{12\text{k}}$$

$$I_2 = 1.17\text{mA}$$

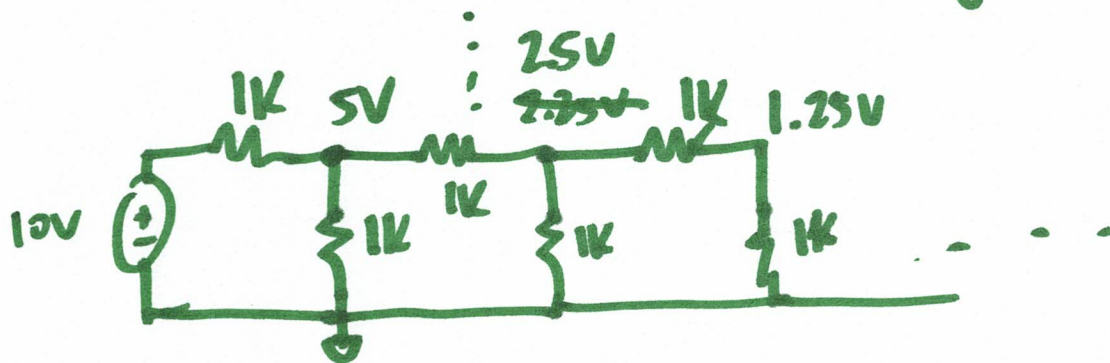




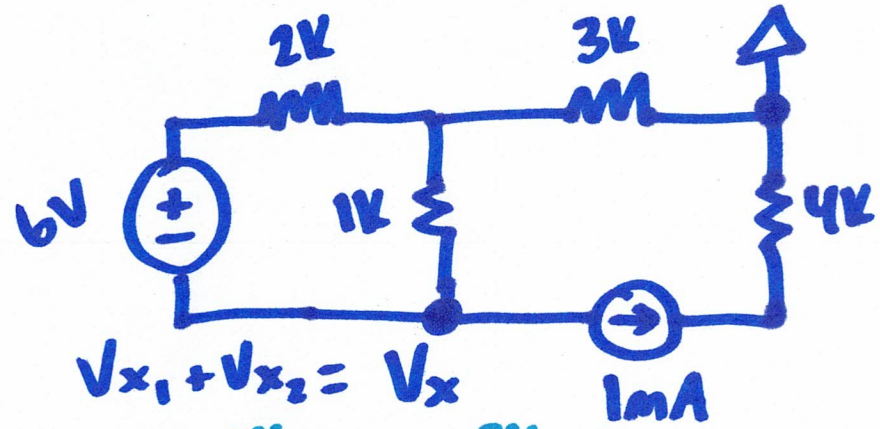
HW5: 2



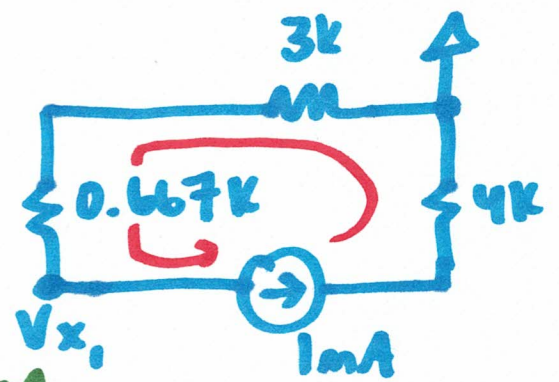
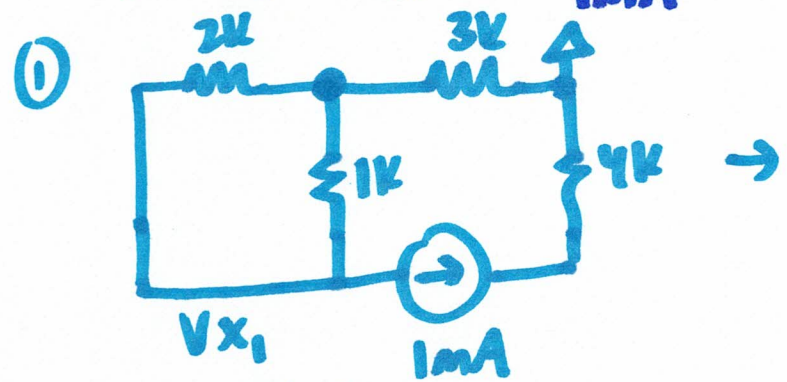
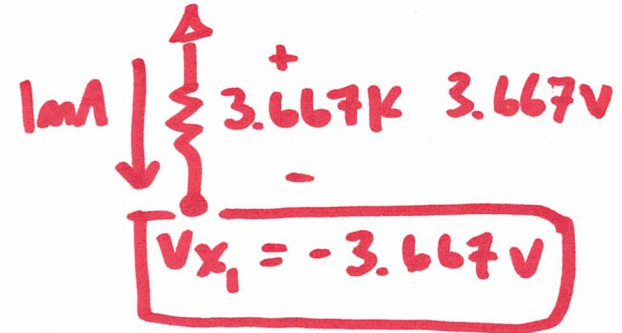
$2k // 2k = 1k$



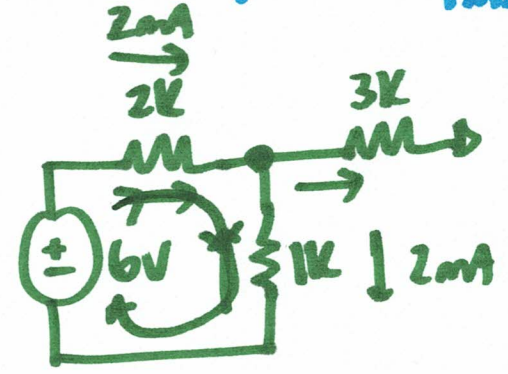
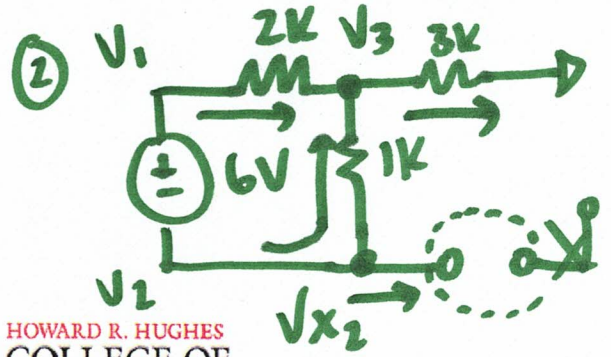
Superposition example:



$V_{x_1} + V_{x_2} = V_x$



$V_1 = V_2 + 6V$



$6V - 2kI - 1kI = 0$

$6V - 3k \cdot I = 0$

$I = 2mA$