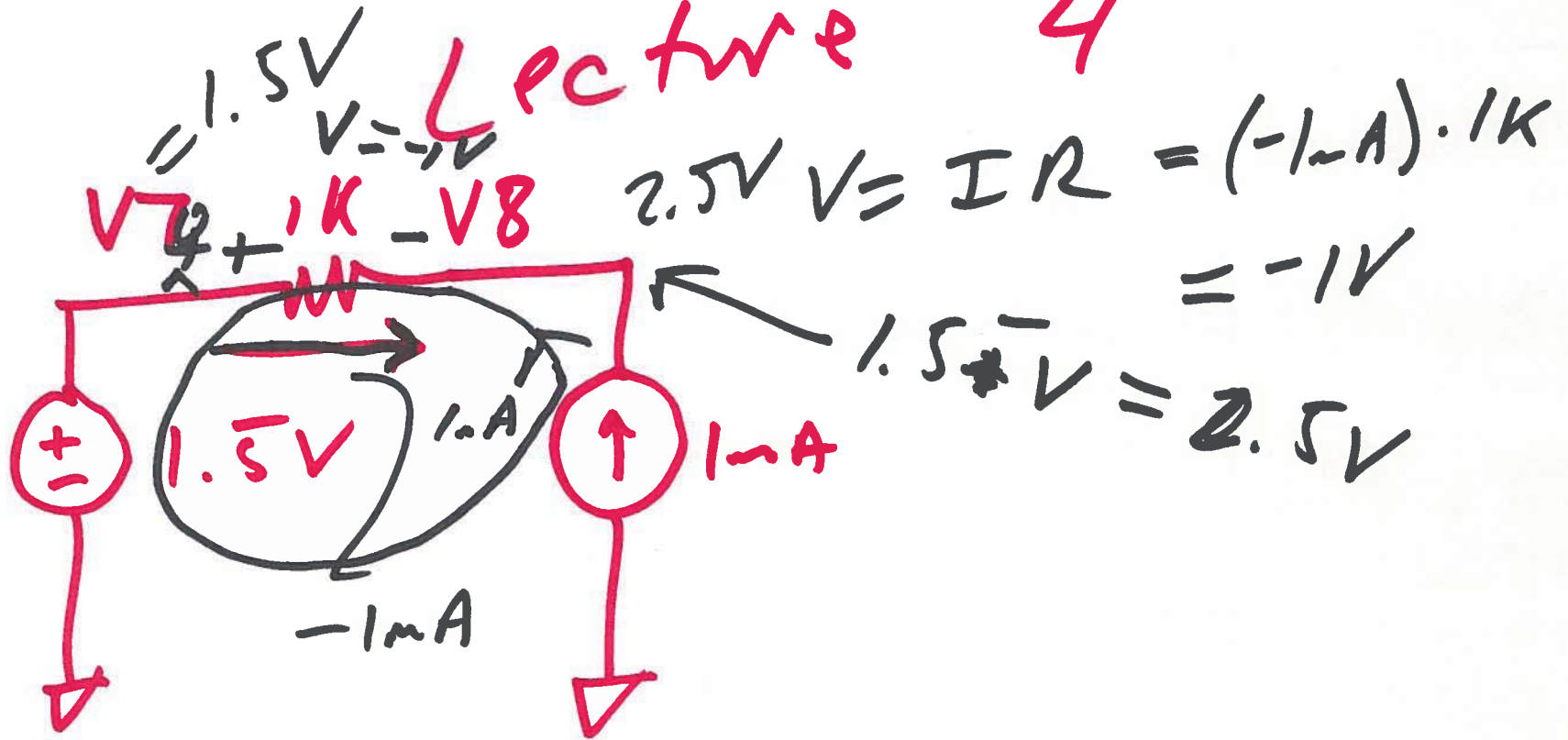


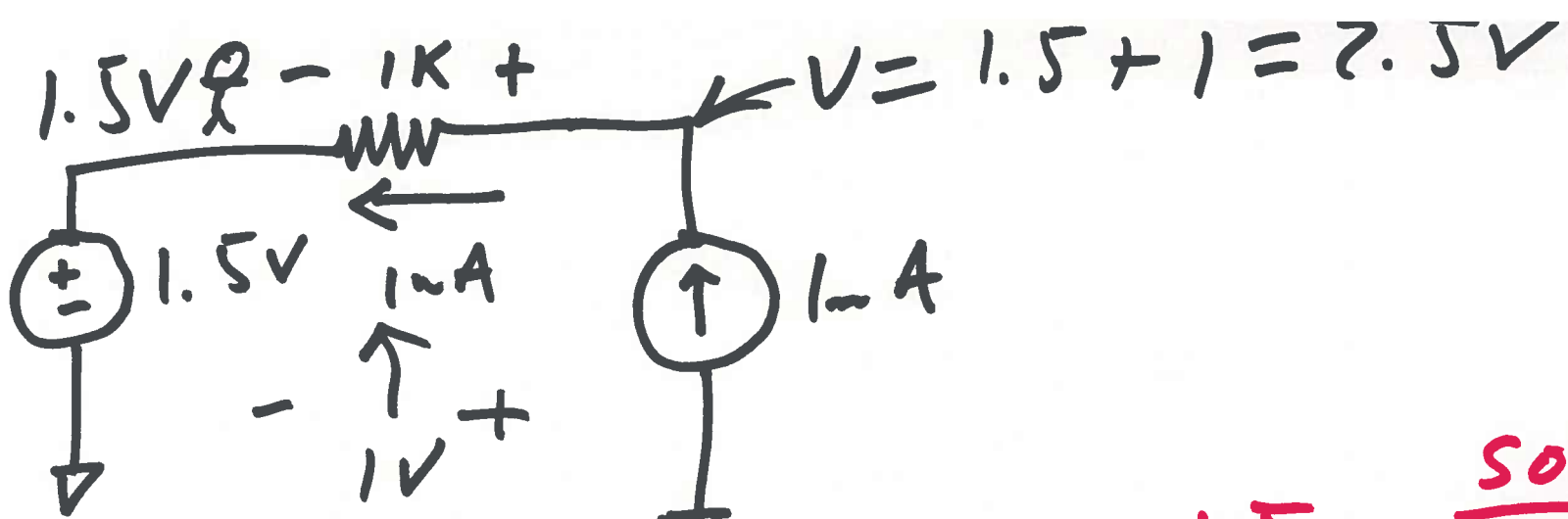
EE 220

Sept. 10, 2018

Lecture 4



1)



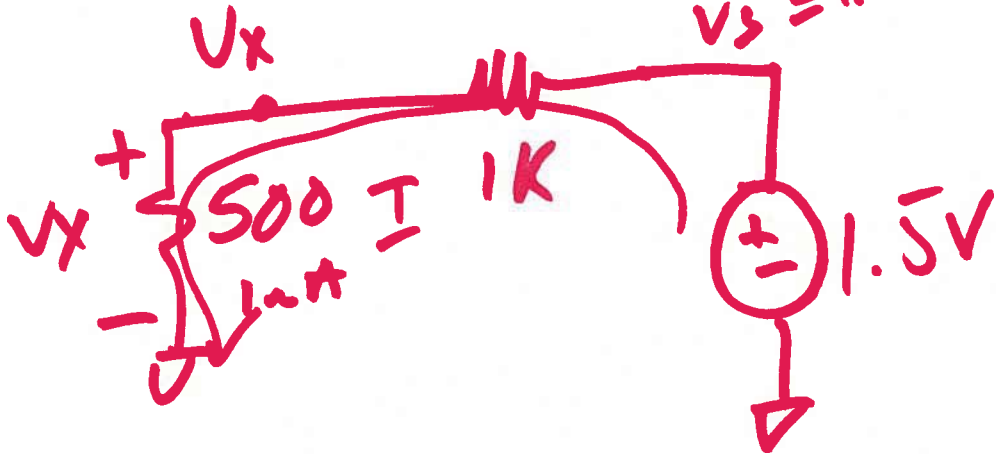
$$V_x = 1.5 \cdot \frac{500}{1K + 500}$$

$$= \underline{\underline{0.5V}}$$

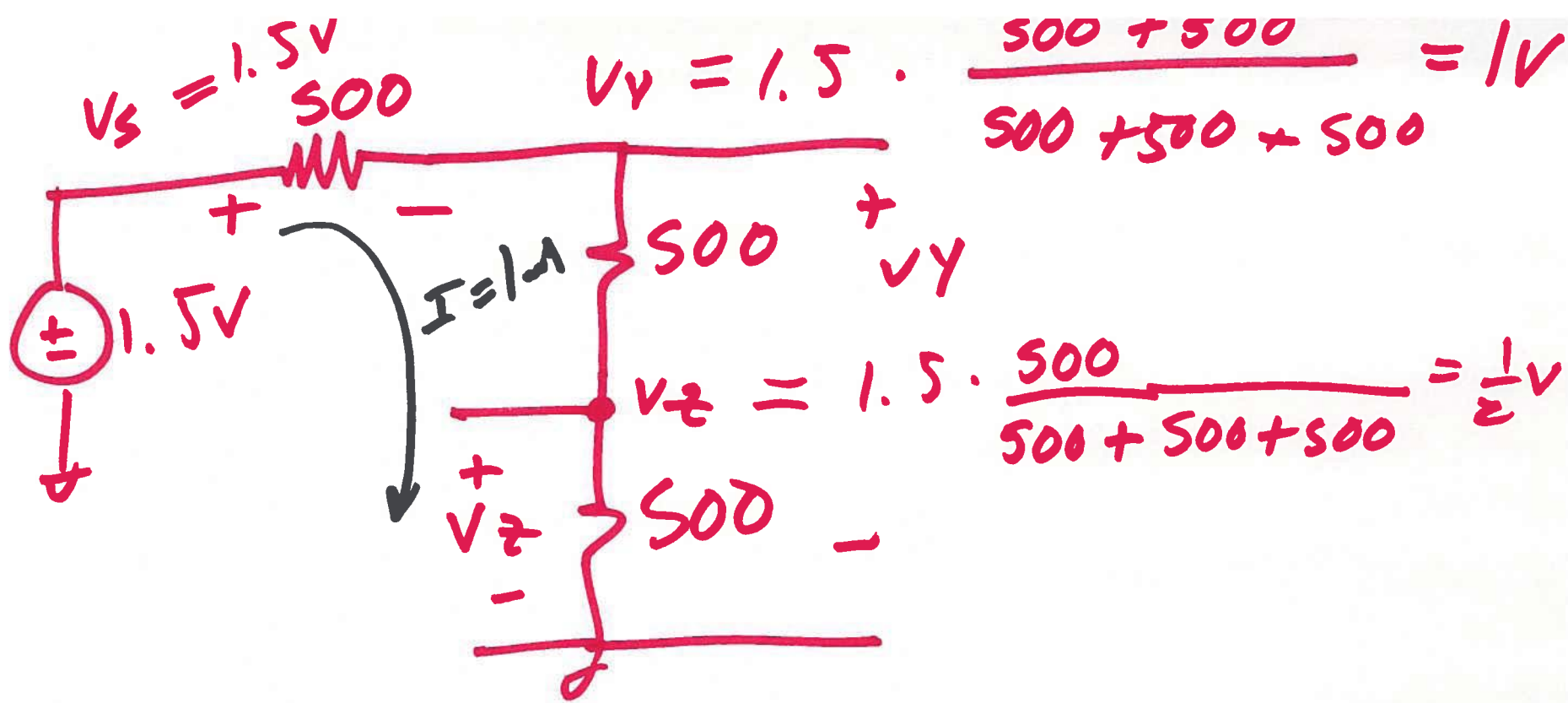
$$I = \frac{1.5V}{1.5K} = 1mA$$

$$V_x = 1mA \cdot 500\Omega$$

$$= 0.5V = \underline{\underline{500mV}}$$

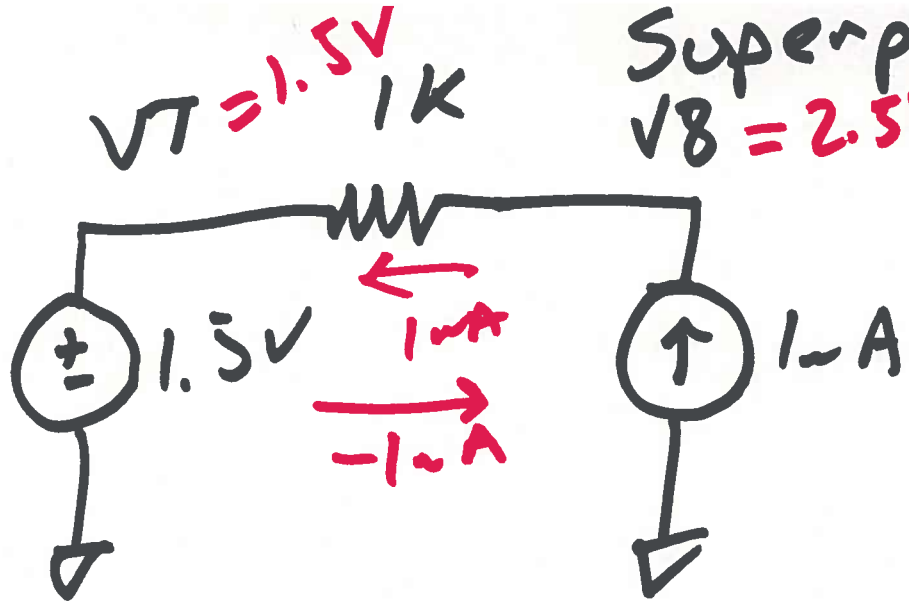


2)

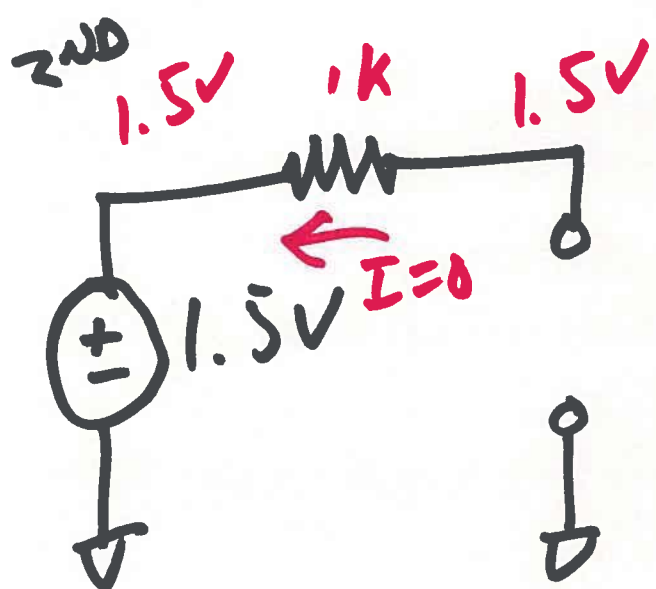
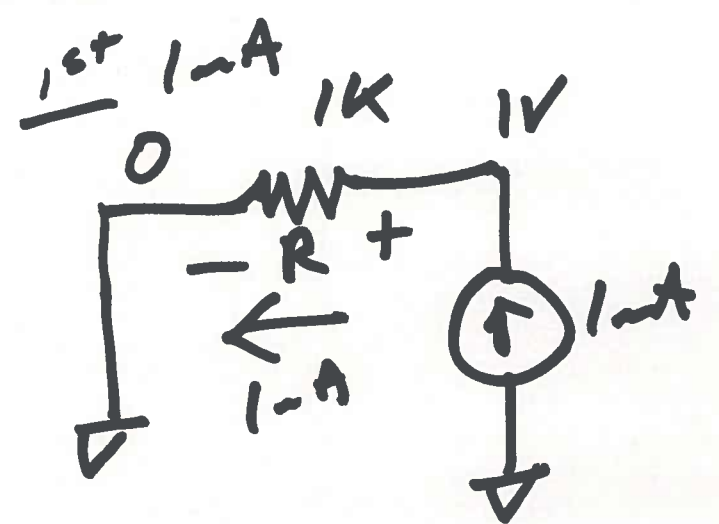


$$V_s - V_y = \frac{1}{2}V$$

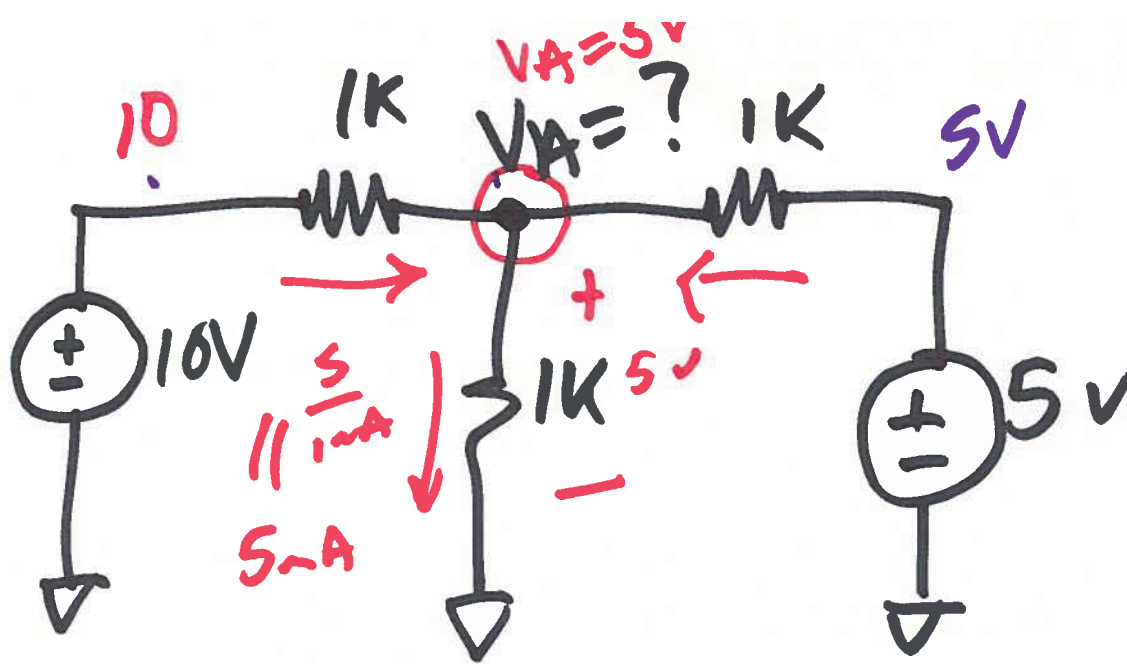
$$V_y - V_z = \frac{1}{2}V$$



Superposition
 $V_B = 2.5V$



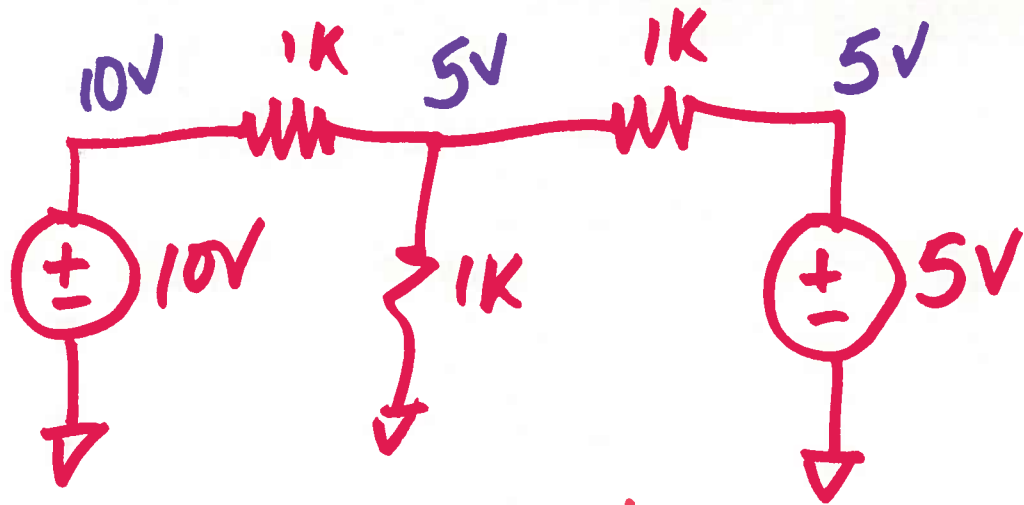
4)



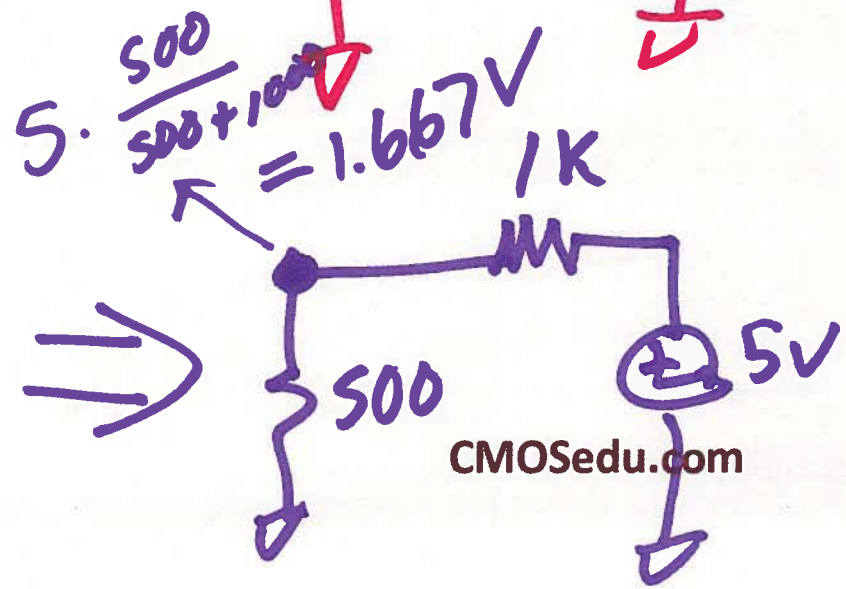
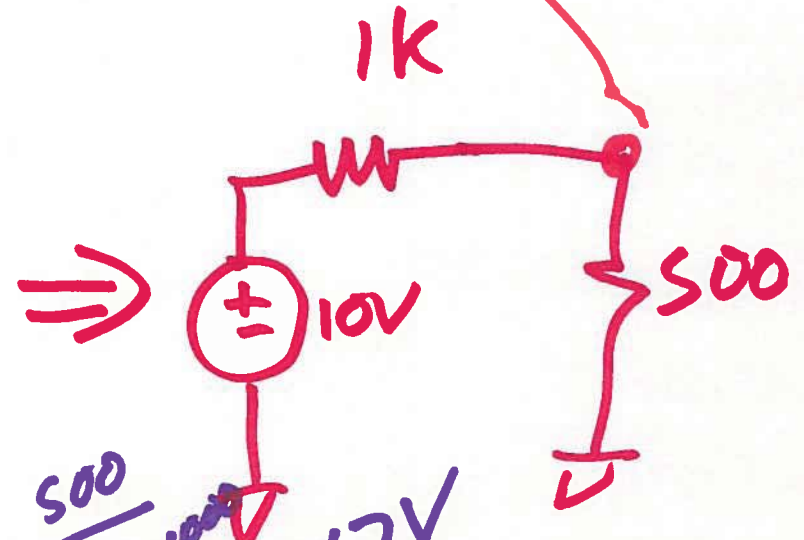
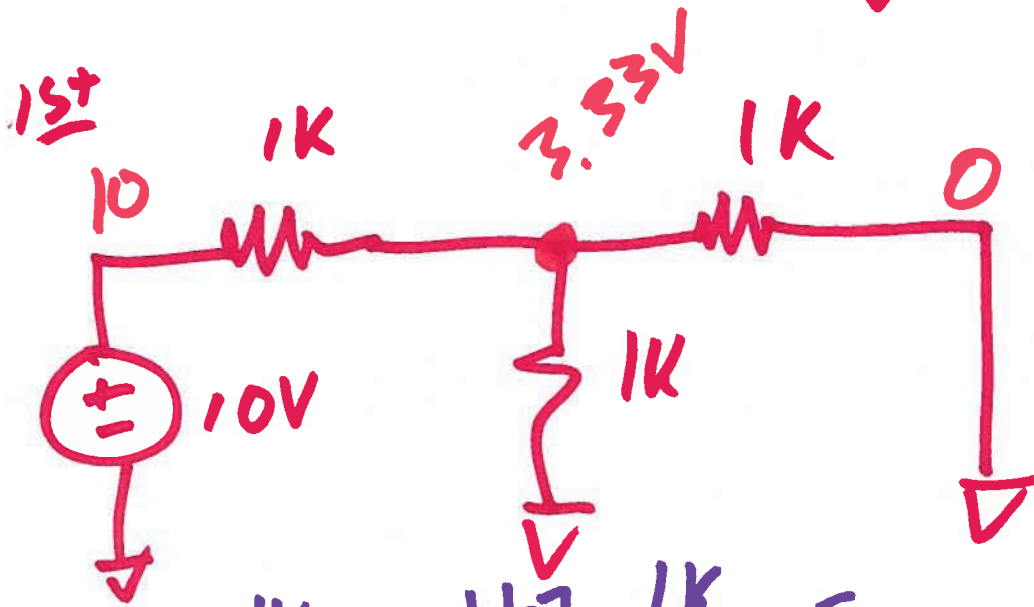
$$\frac{10 - V_A}{1k} + \frac{5 - V_A}{1k} = \frac{V_A - 0}{1k} \quad \text{KCL}$$

$$15 = 3V_A \quad \boxed{V_A = 5V}$$

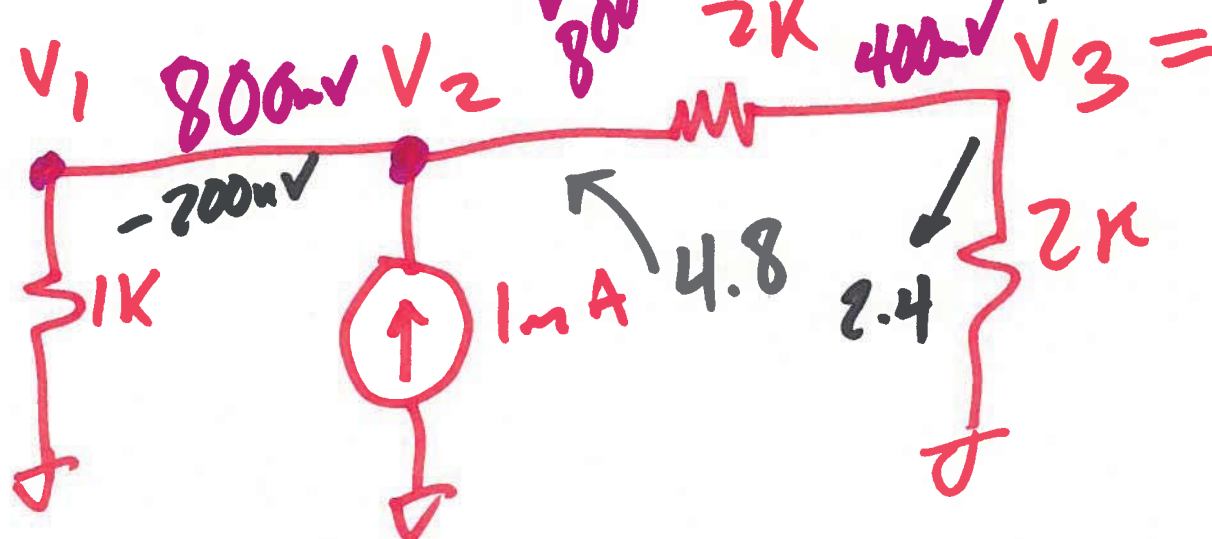
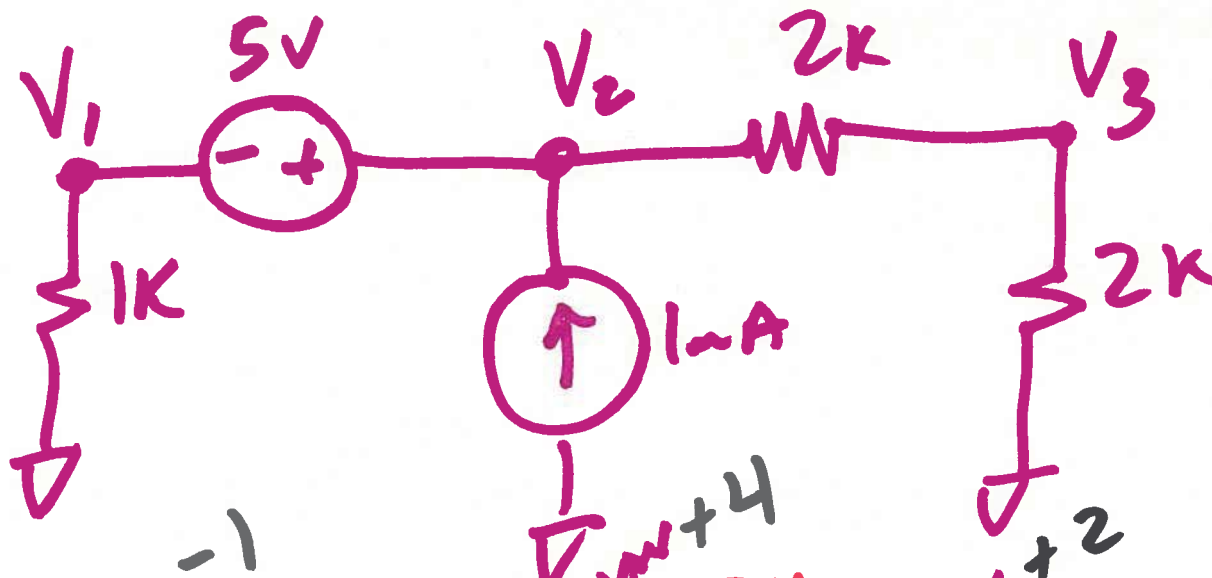
5)



$$10 \cdot \frac{500}{500 + 1K} =$$



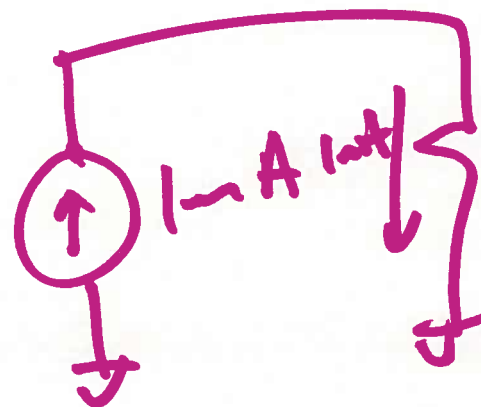
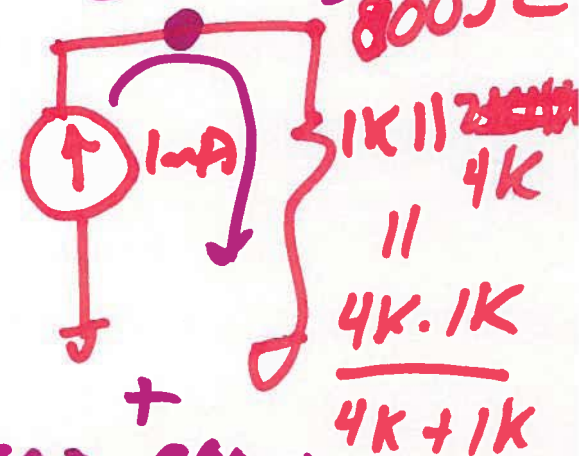
6)



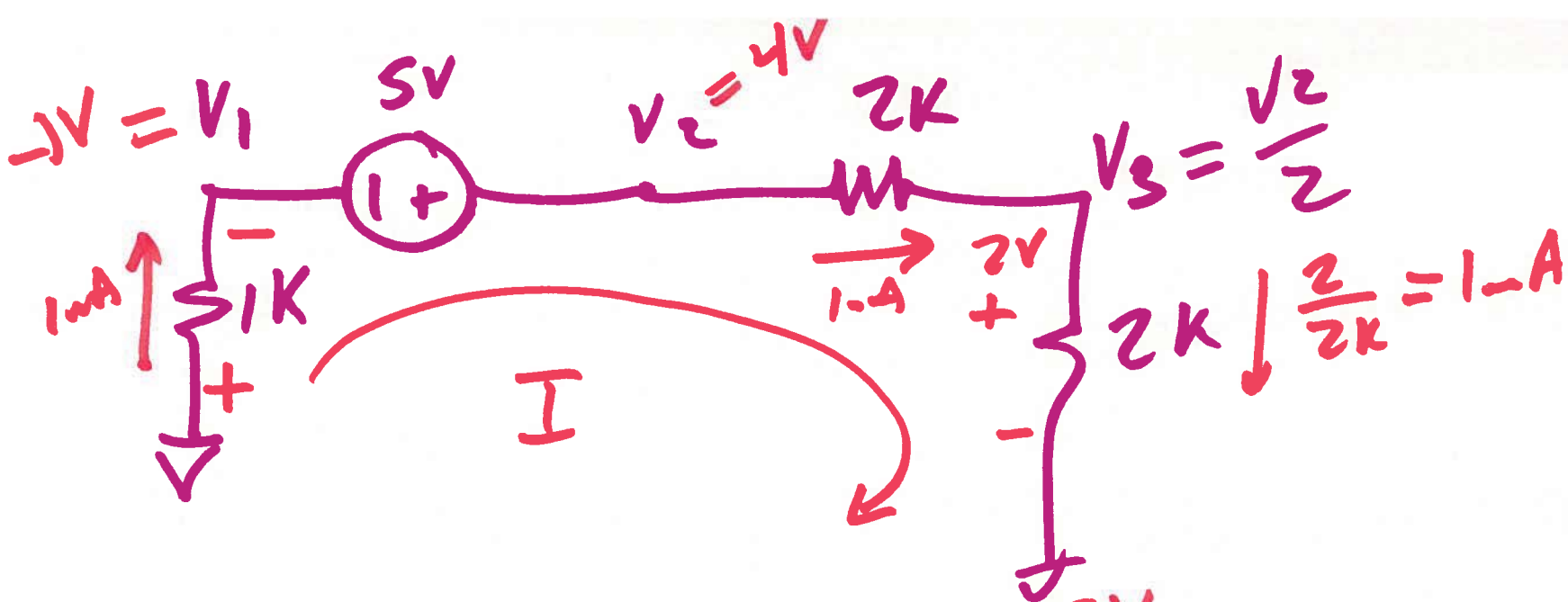
Superposition

$$\frac{4k \cdot 1k}{4k + 1k}$$

$$V_2 = \frac{4 \cdot 10^6}{5 \cdot 10^3} = 800$$



$$800 + 800mV -$$



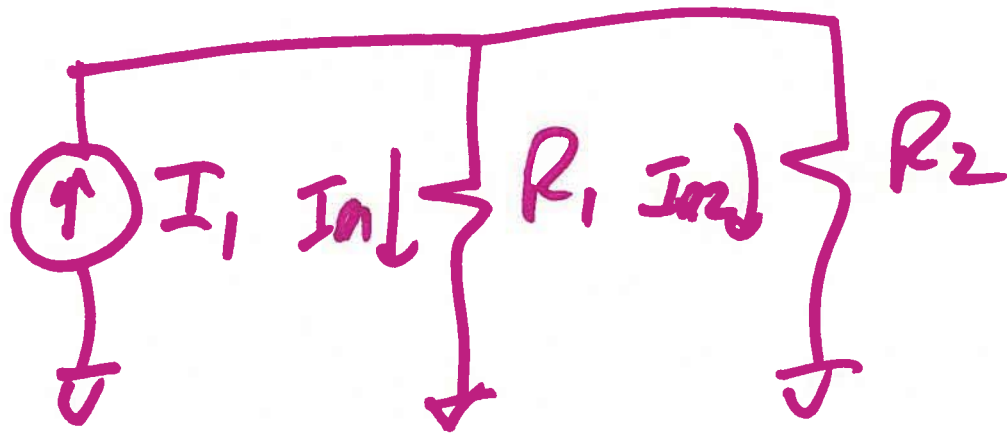
$$I = \frac{5}{1k + 2k + 2k} = \frac{5V}{5k} = 1mA$$

$$V_1 = -5 \cdot \frac{1k}{1k + 2k + 2k} = \underline{\underline{-1V}}$$

$$V_3 = 5 \cdot \frac{2k}{2k + 2k + 1k} = \underline{\underline{2V}}$$

$$V_2 = 5 \cdot \frac{4k}{4k + 1k} = 4V$$

8)



$$I_{R2} = I_1 \cdot \frac{R_1}{R_1 + R_2}$$

$$I_{R1} = I_1 \cdot \frac{R_2}{R_1 + R_2}$$