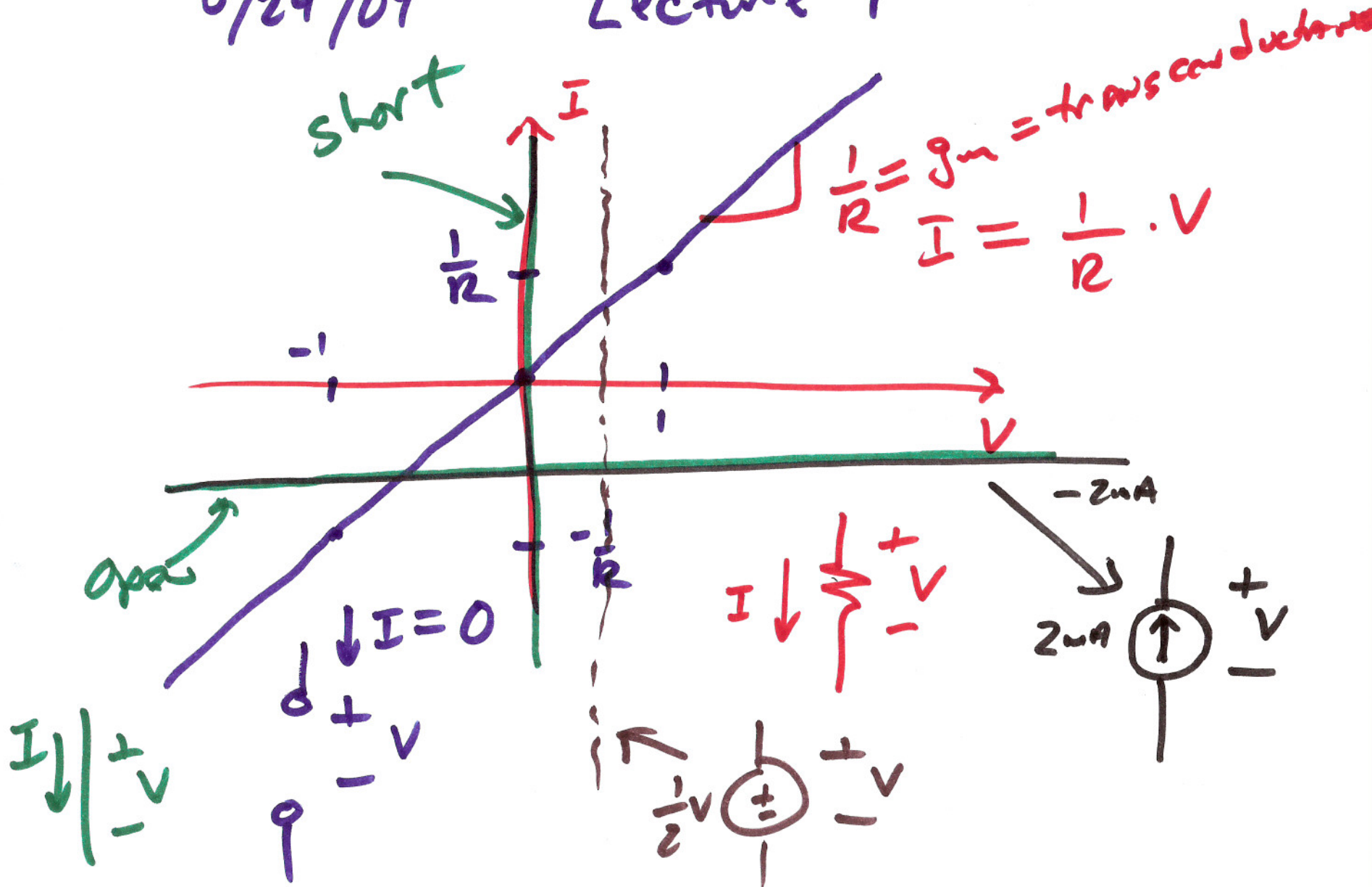
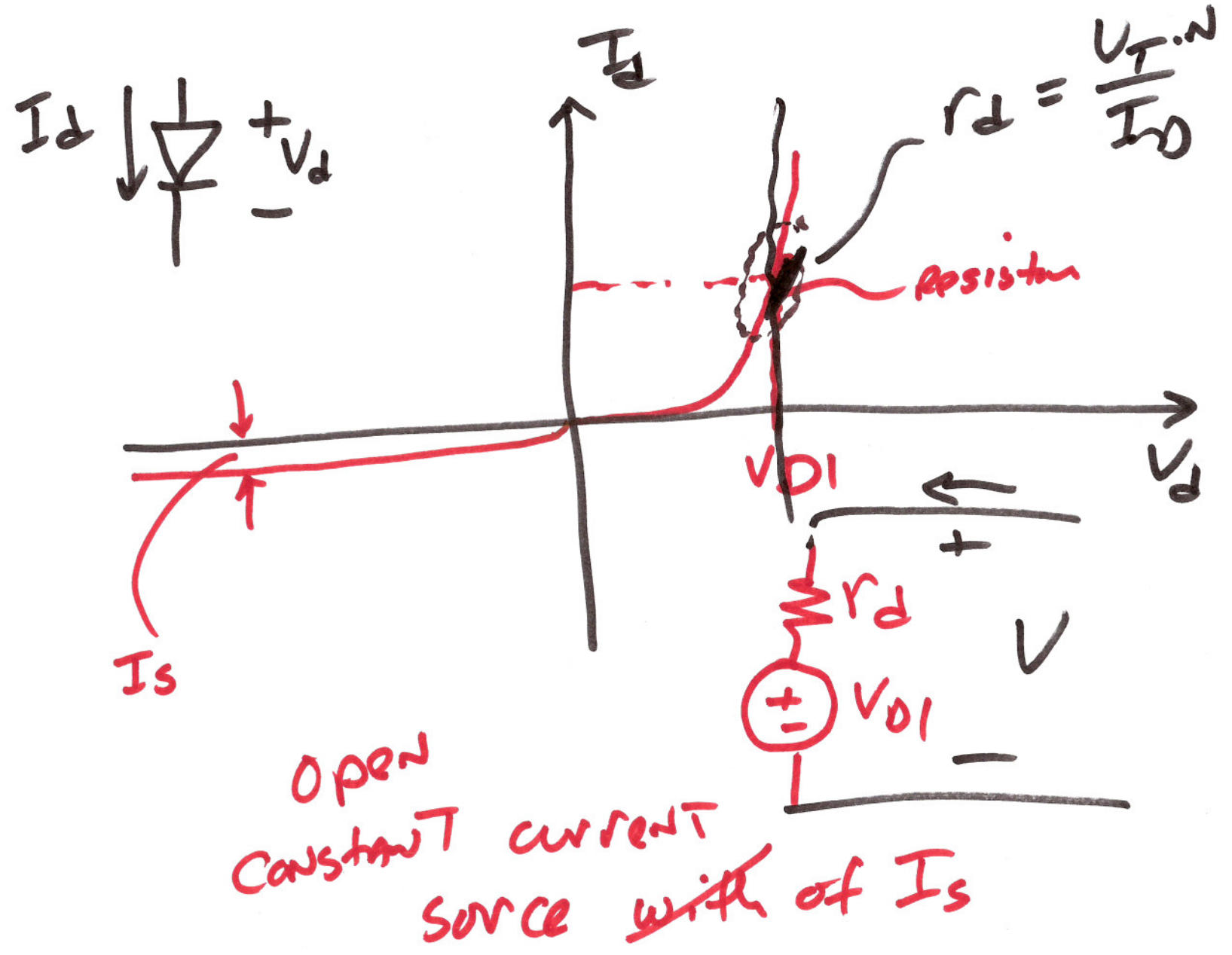


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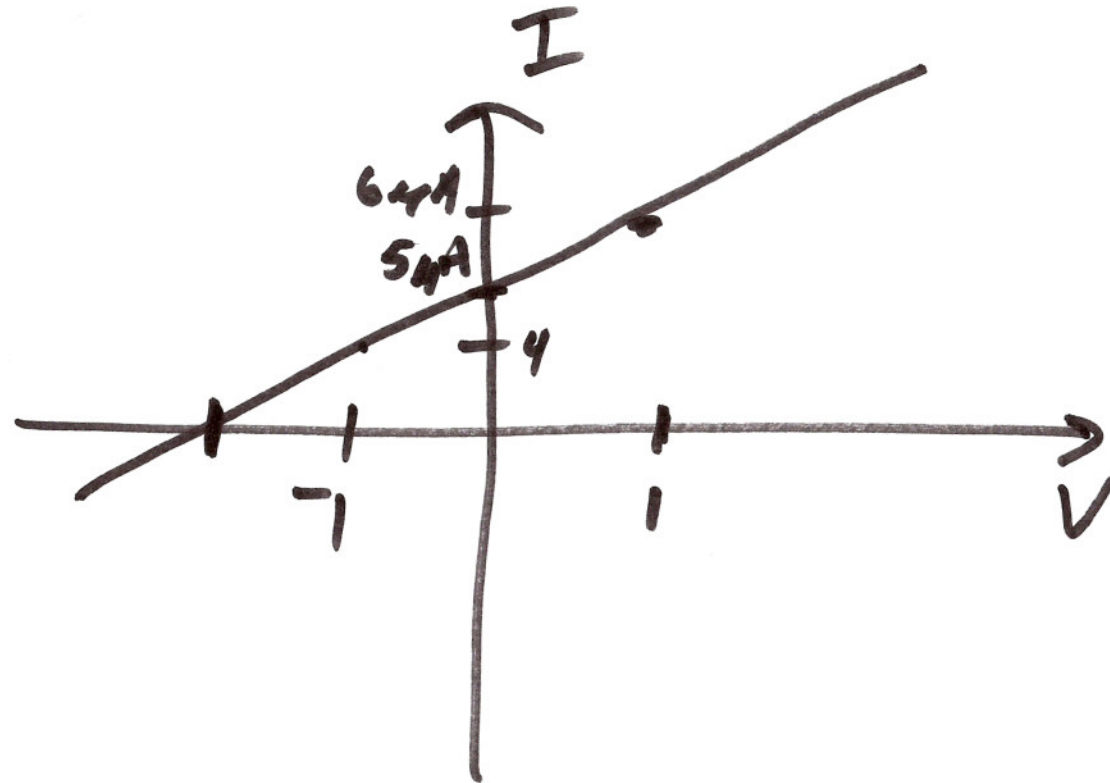
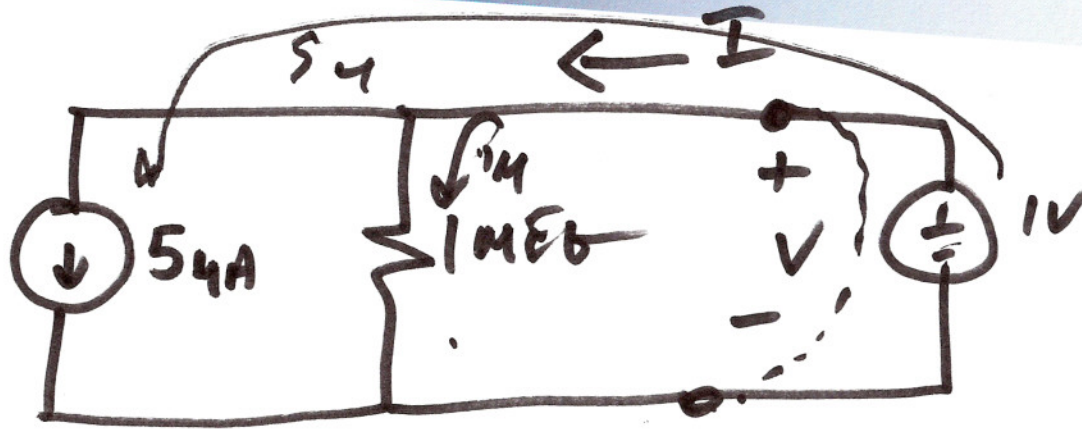
Lecture 1



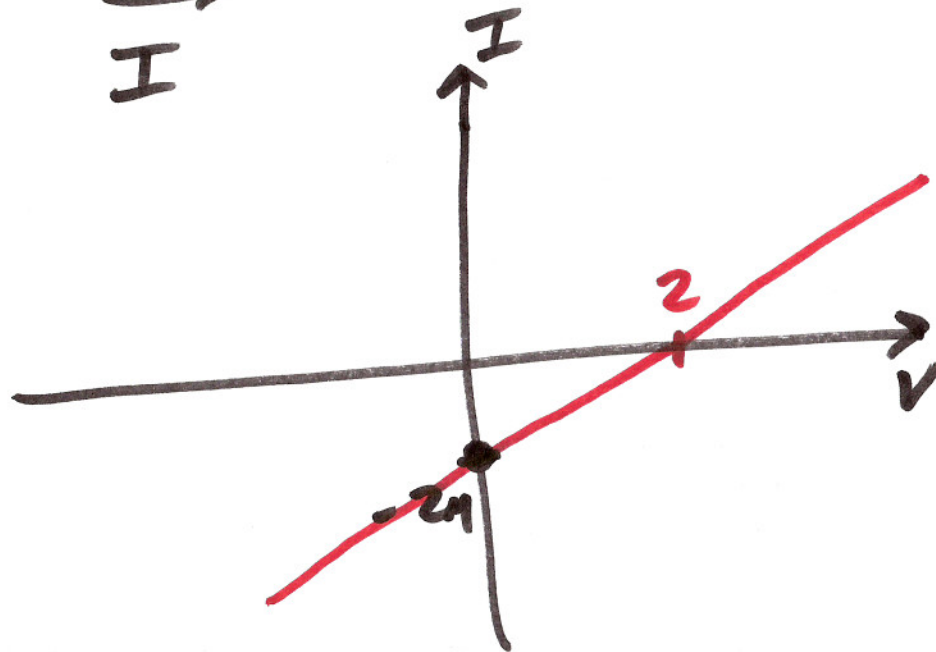
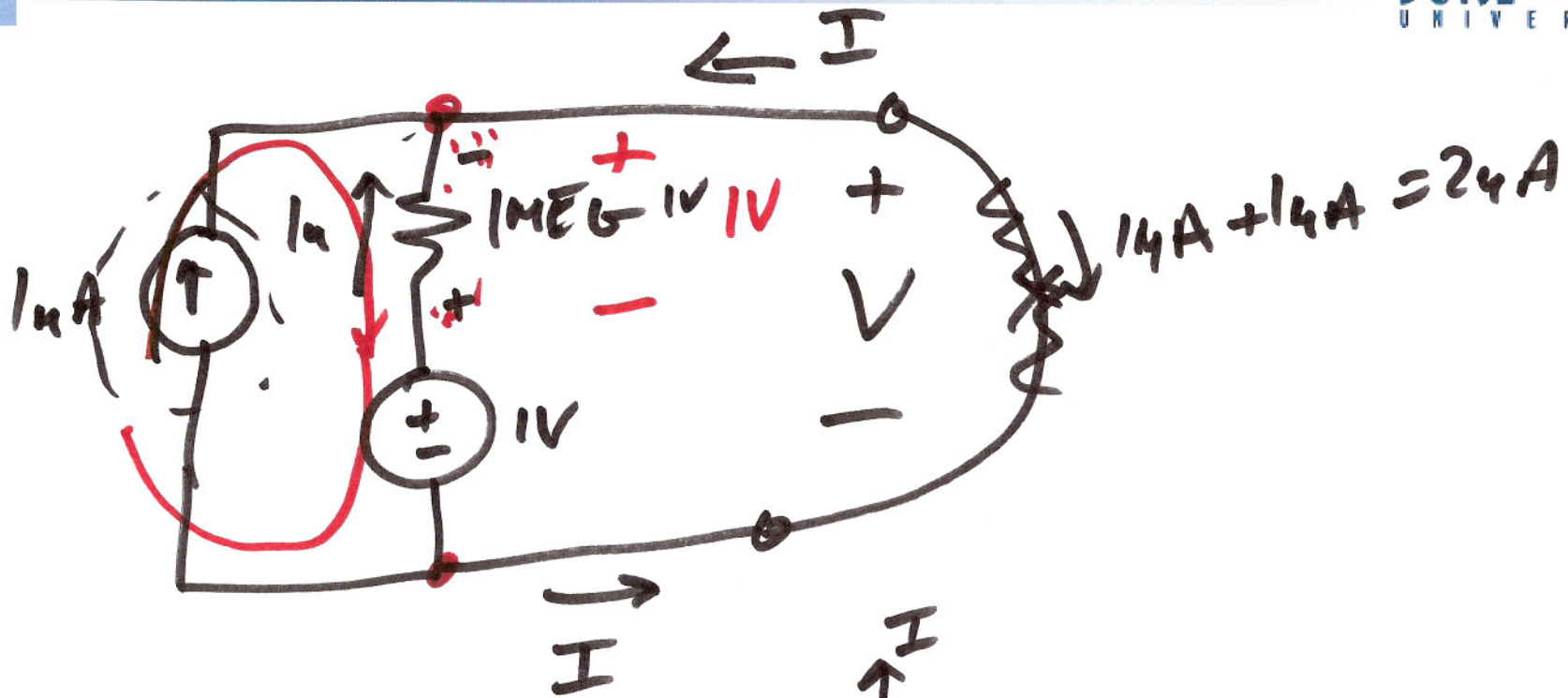
1)



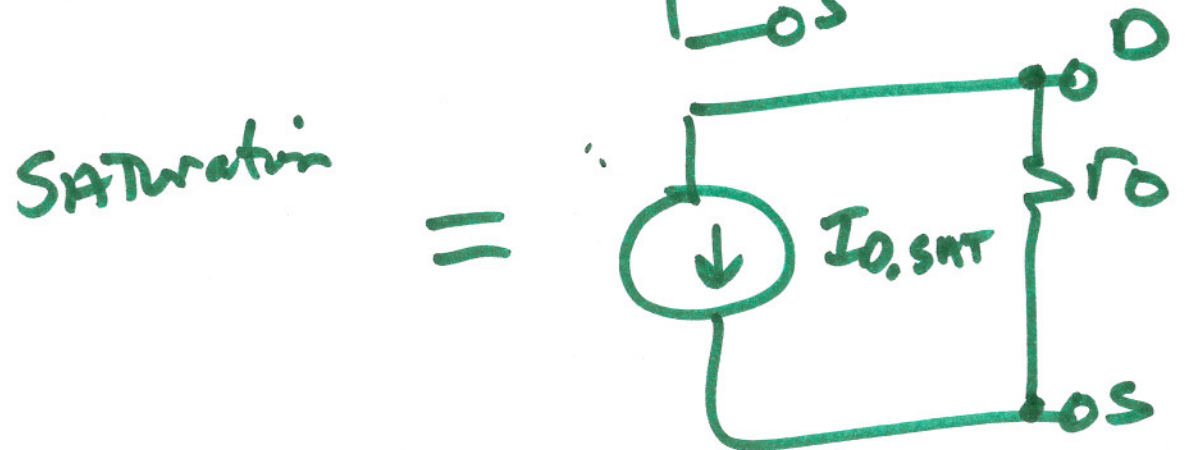
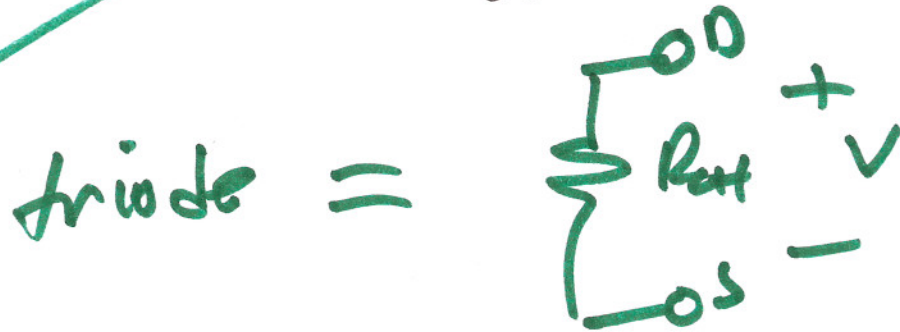
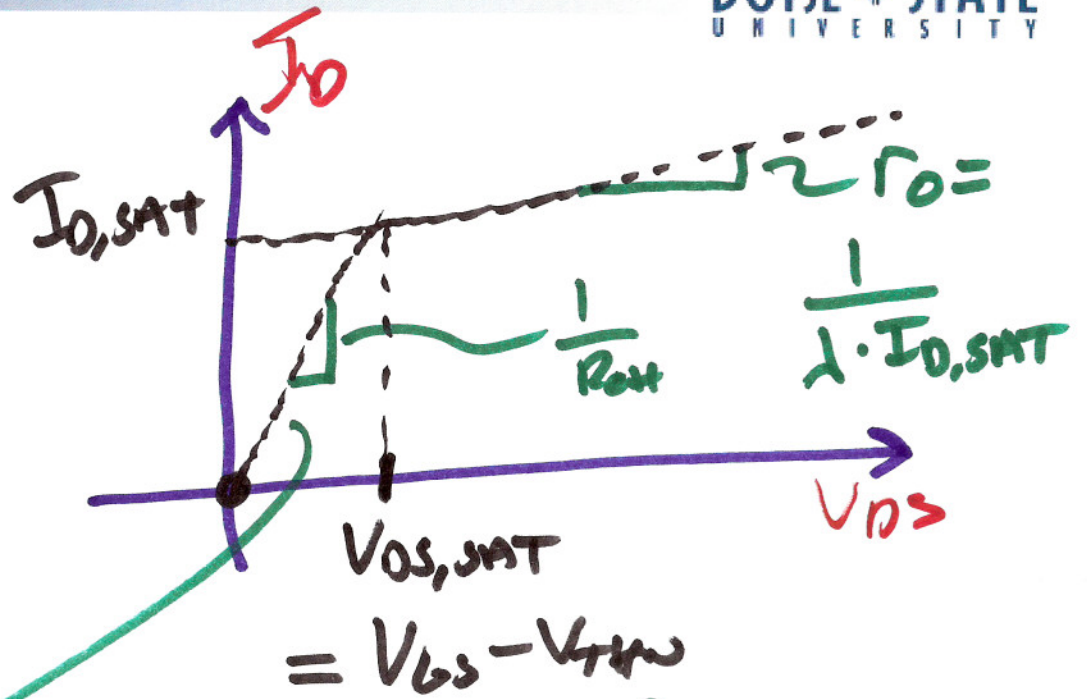
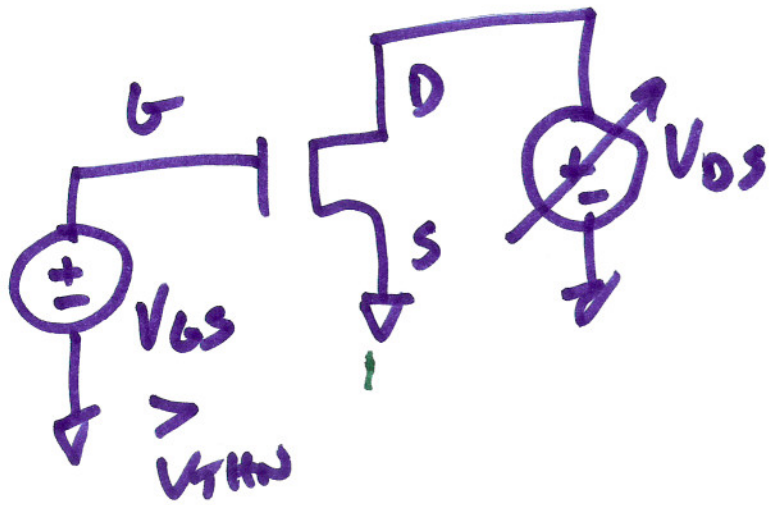
2)



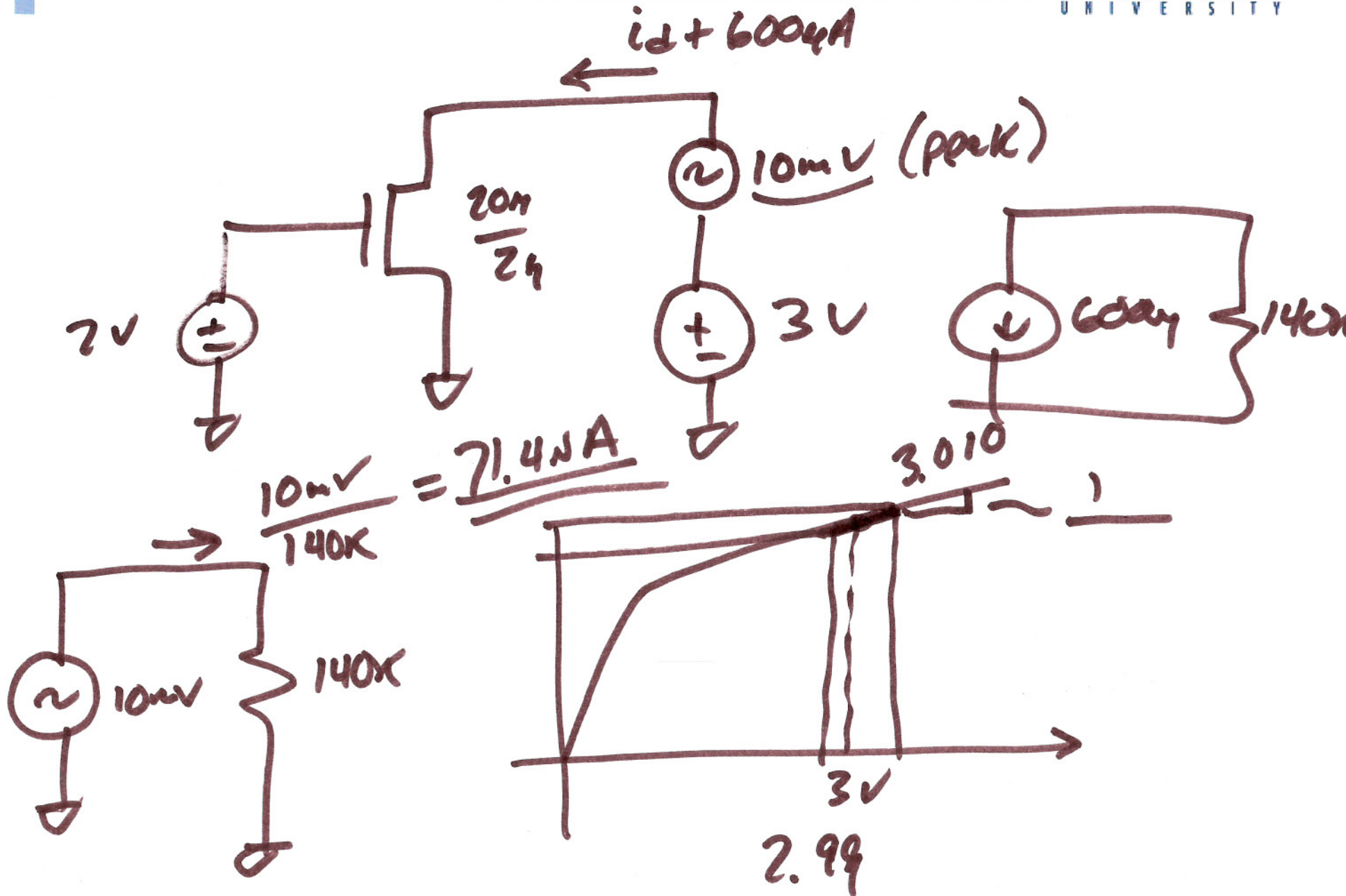
3)



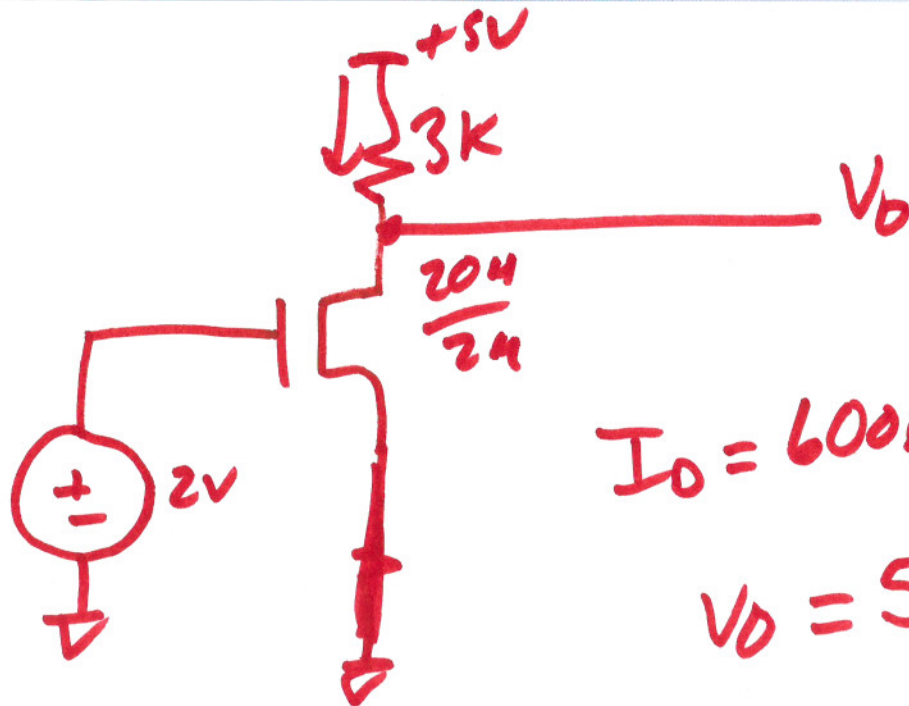
4)



5)



6)



$$K_{PN} = 120 \mu A/V^2$$

$$K_{PP} = 40 \mu A/V^2$$

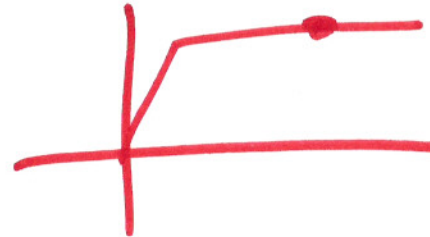
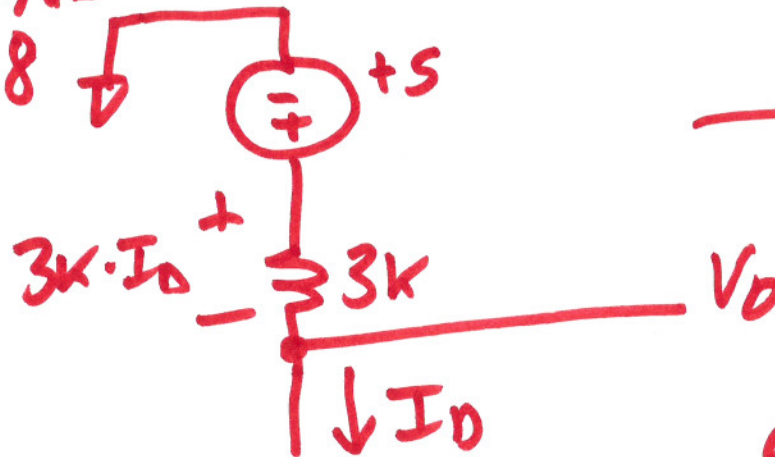
$$I_D = 600 \mu A$$

$$V_D = 5 - 3k \cdot I_D = \underline{\underline{3.2V}}$$

$$V_{DS} \geq V_{GS} - V_{TH}$$

$$2 - .8$$

$$V_{DS} \geq \underline{\underline{1.2V}}$$

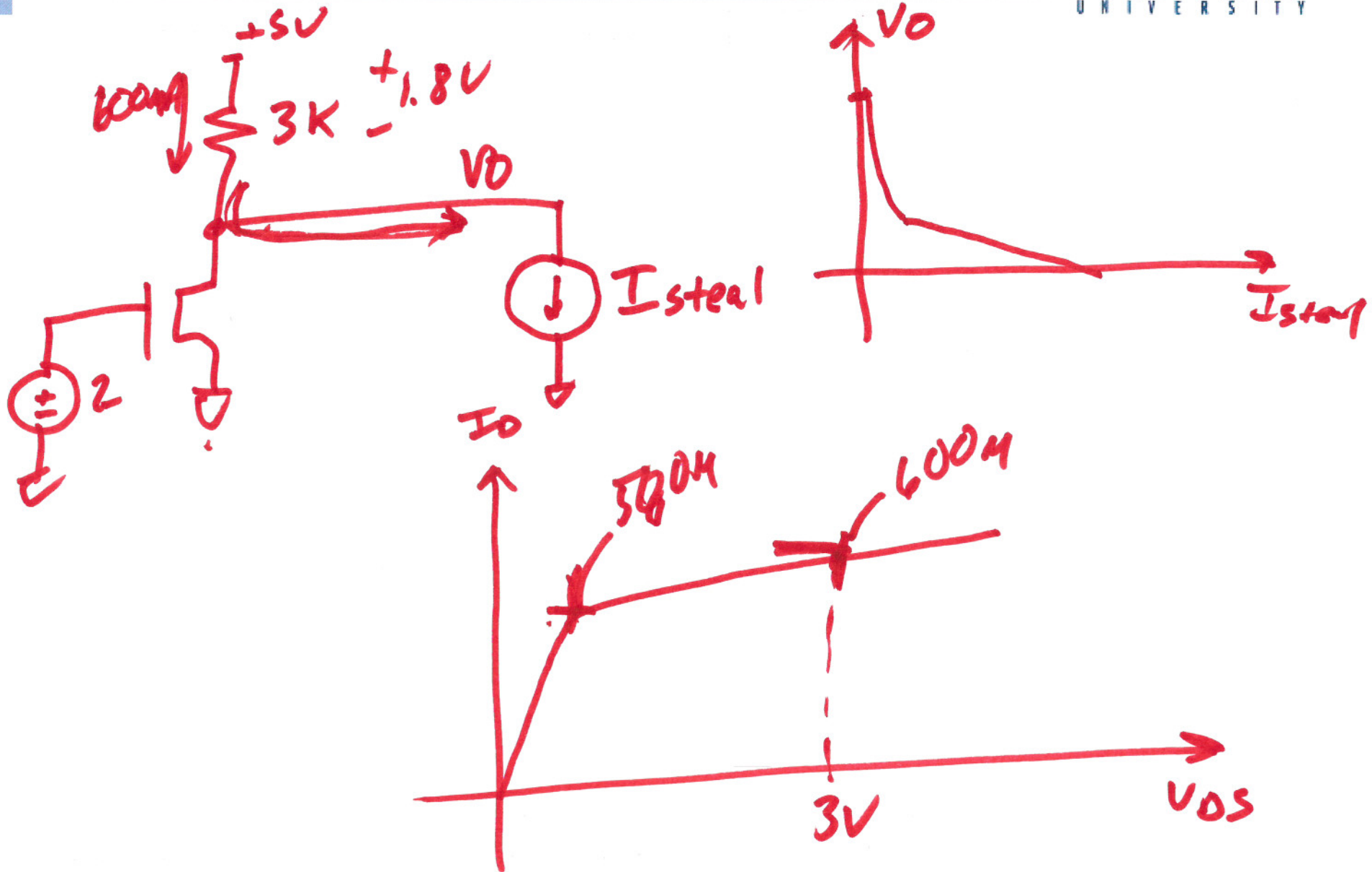


$$I_D = \frac{K_{PN}}{2} \cdot \frac{W}{L} (V_{GS} - V_{TH})^2$$

$$600 = \frac{120}{2} \cdot \frac{20}{2} (2 - .8)^2$$

$$600 = \frac{600}{1.44} \cdot 1.44$$

7)



8)