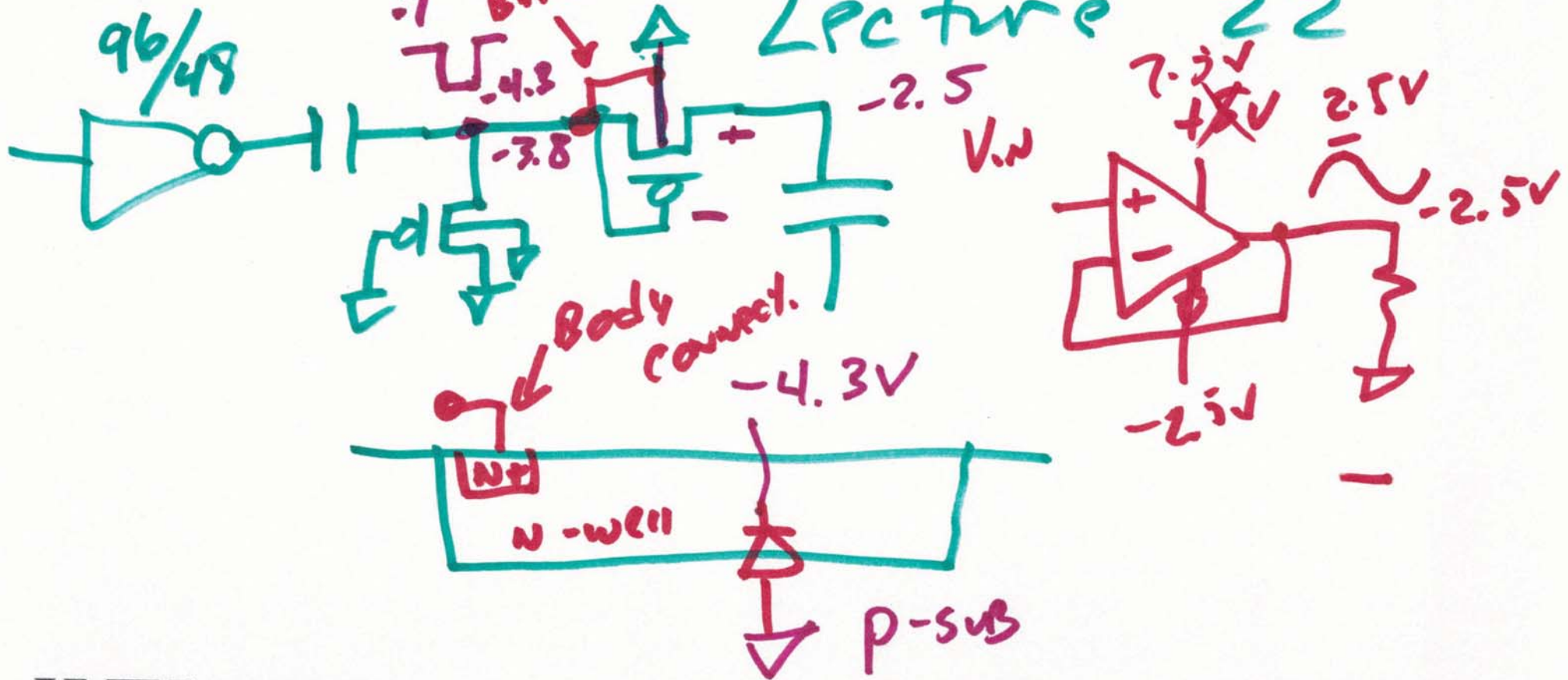
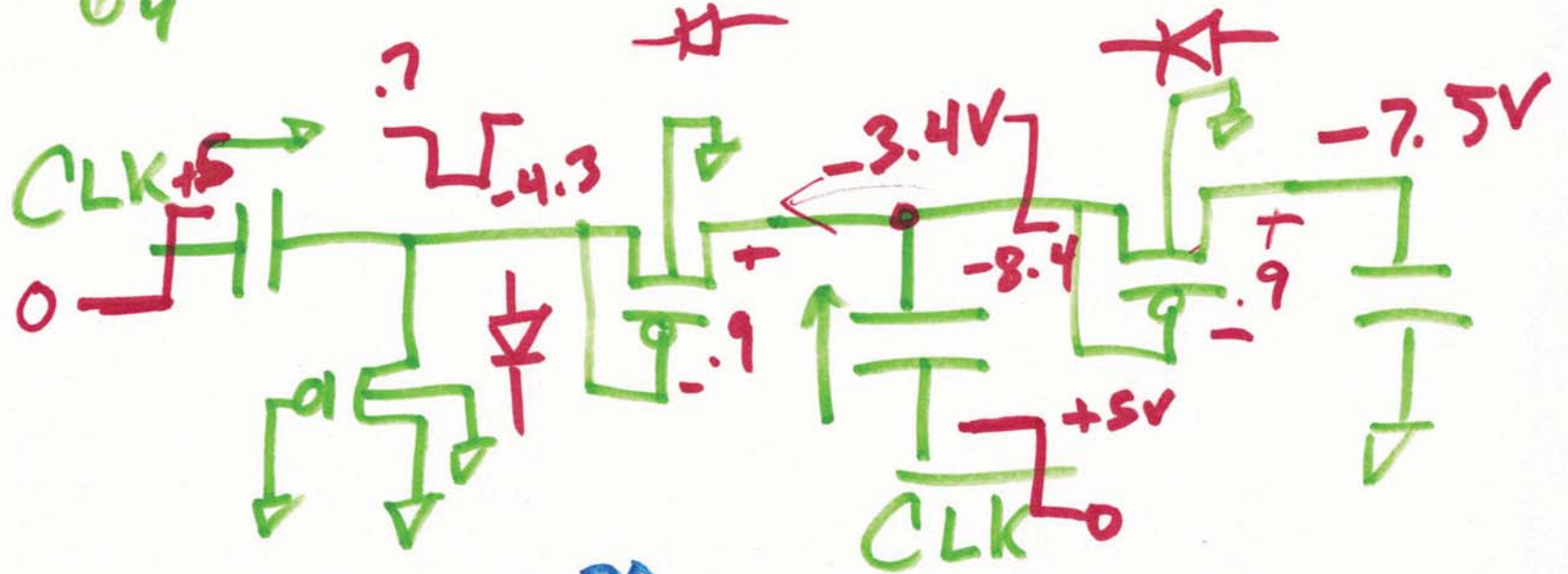
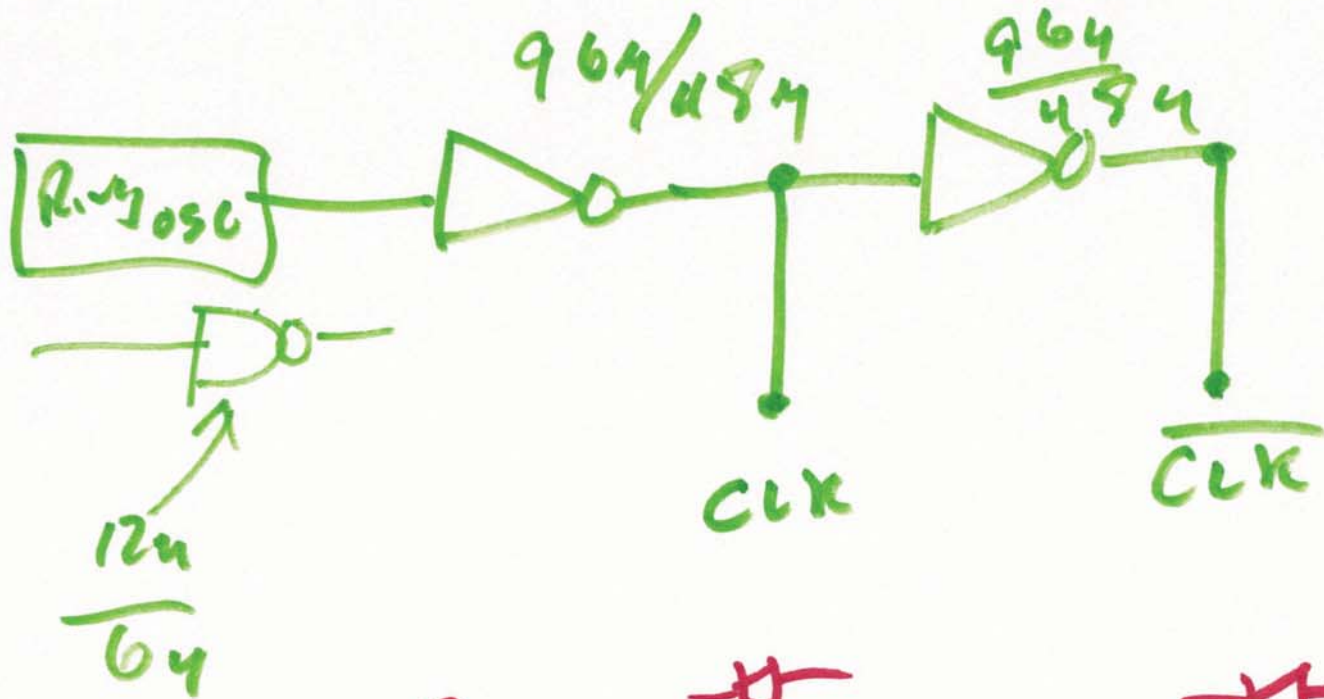


EE 421/ECG 621 CMOS Digital IC Design

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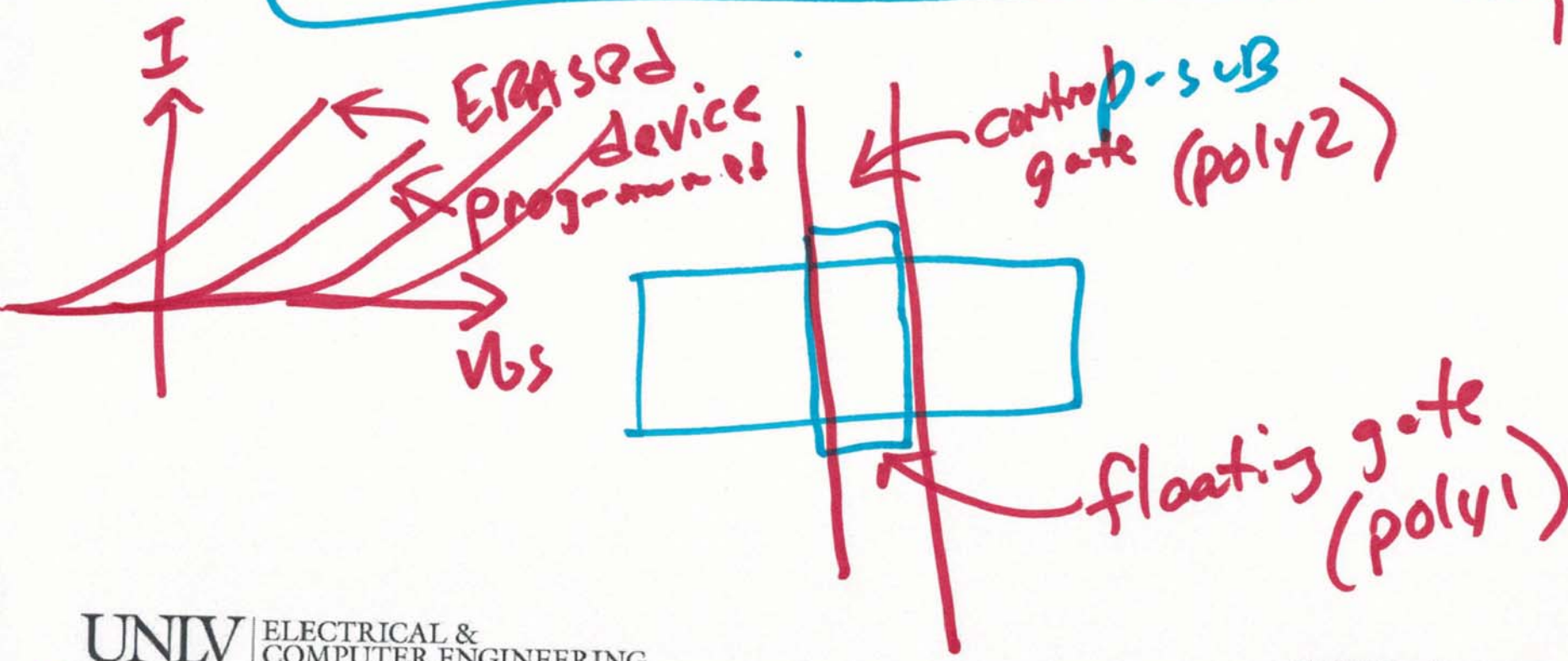
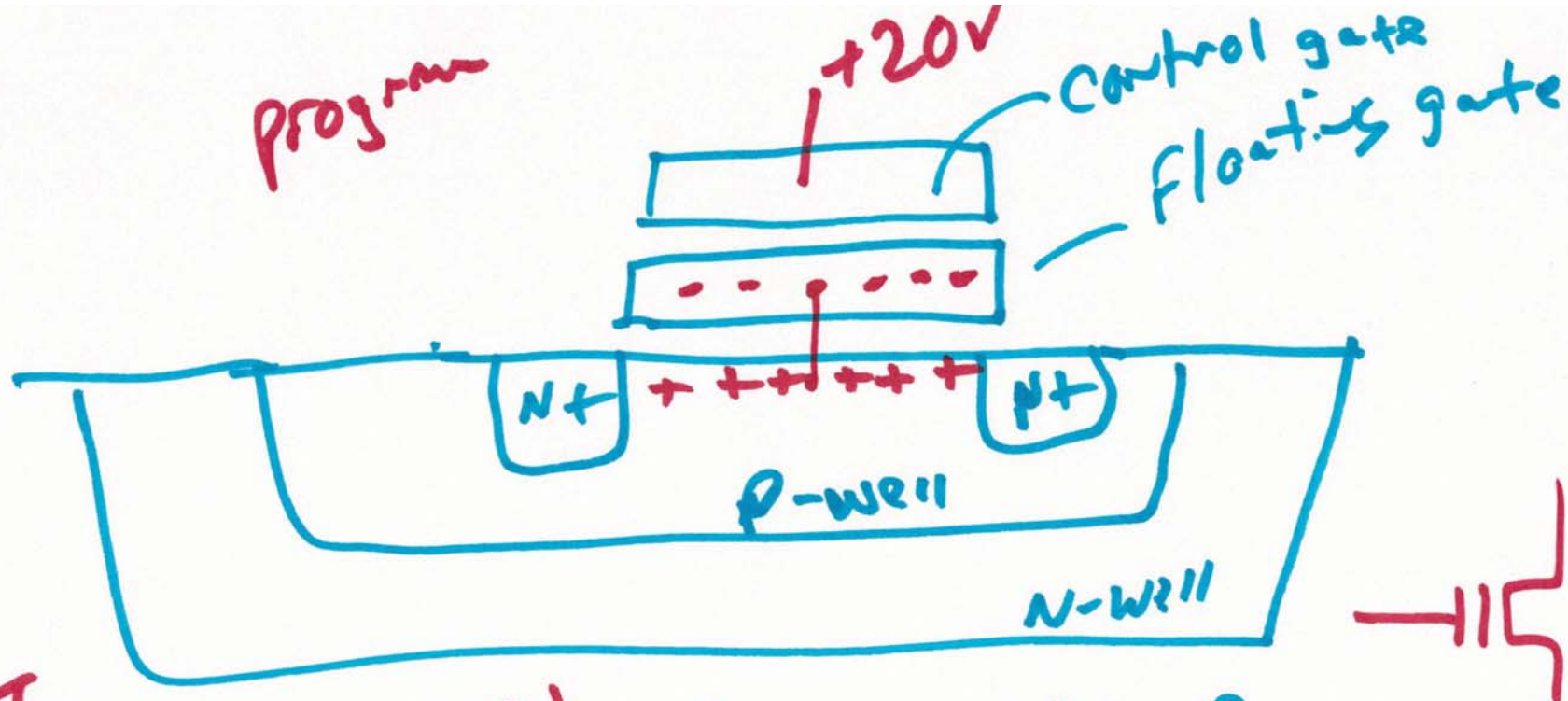
Lecture 22





-20
~~100~~ C
 Body effect $\rightarrow V_{th} = 2V$
 $V_{DD} = 4.5$
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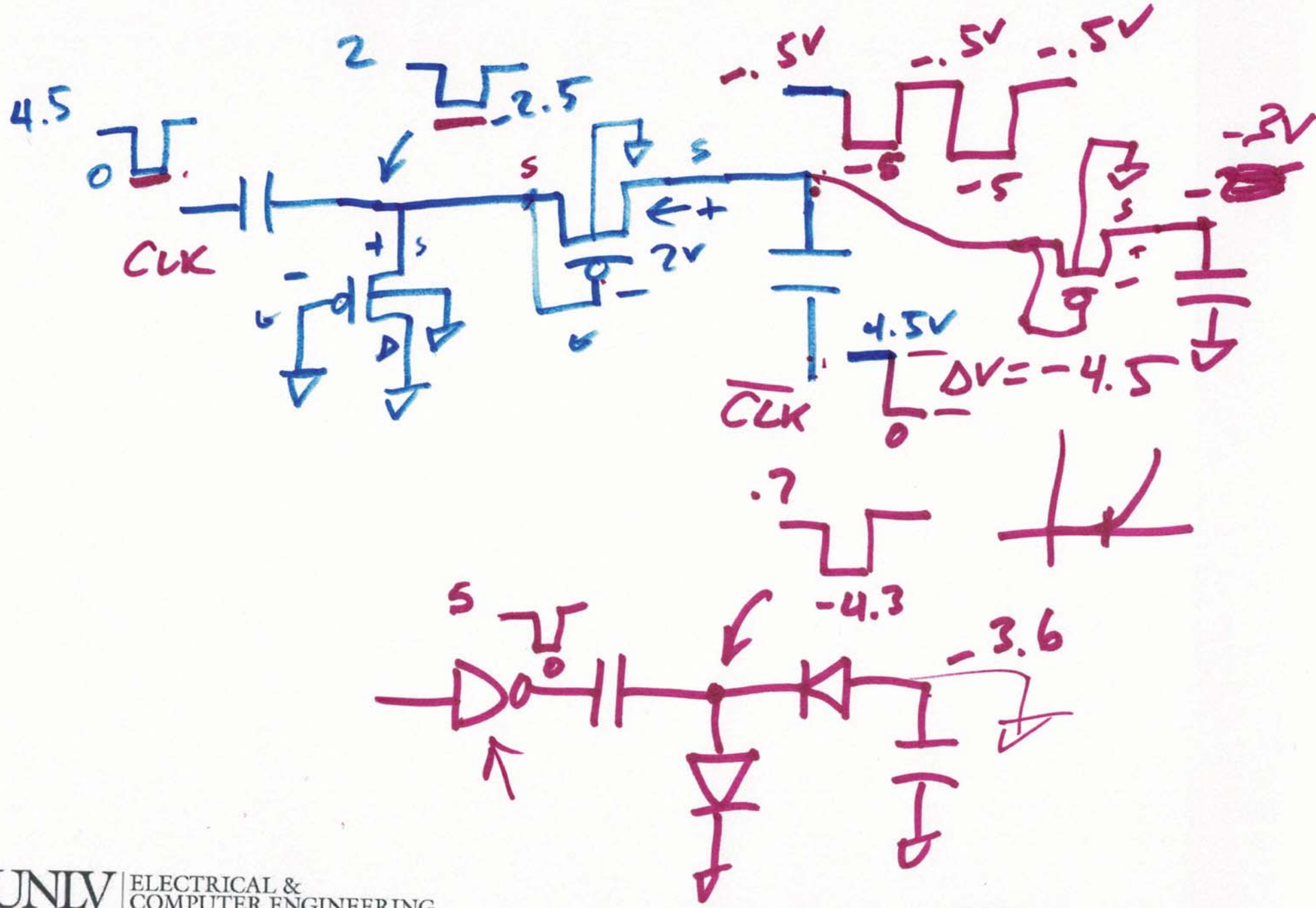
2) go to 4!



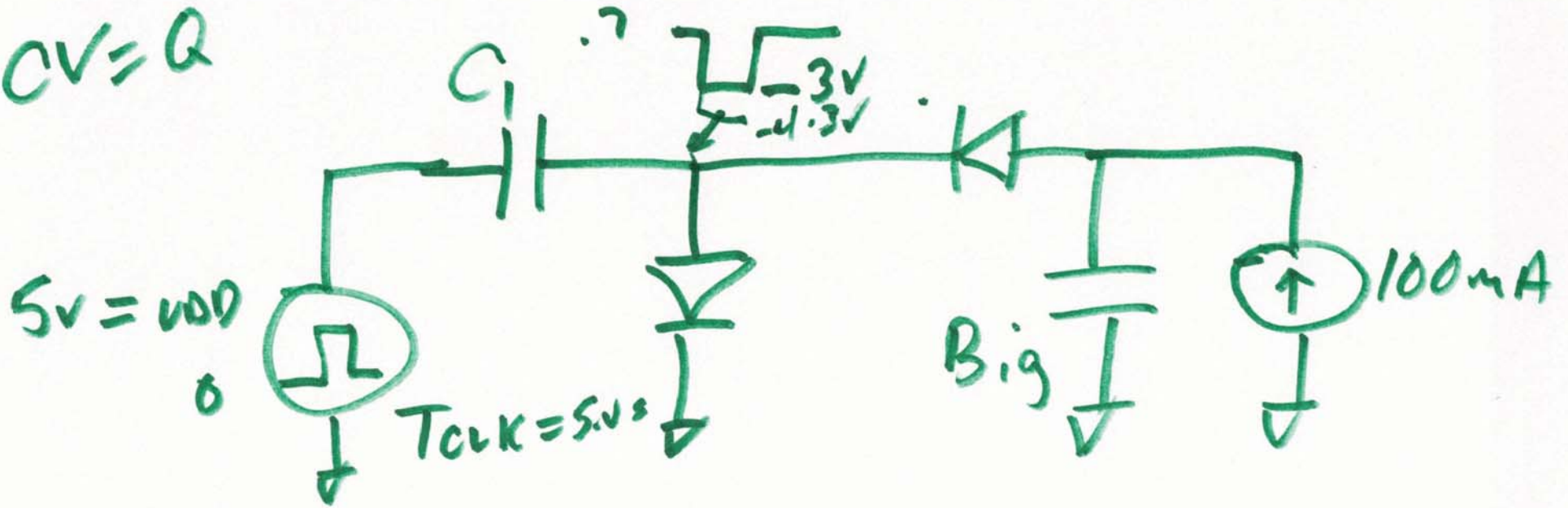
3)

$V_{TH0} = 2V$

$V_{DD} = 4.5V$



$$CV = Q$$



Calculate C_1

$$I_{AVG} = \frac{C_1 \left[(5 - .7) - (0 - (-3)) \right]}{T_{CLK}} \quad \frac{0.5 \text{ pF}}{1.3}$$

$$100 \mu\text{A} = C_1 \frac{1.3}{5 \text{ ns}} \rightarrow C_1 = \frac{5 \cdot 10^{-9} \cdot 10^2 \cdot 10^{-6}}{1.3}$$

$$C_1 = \underline{\underline{.3 \text{ pF}}}$$

