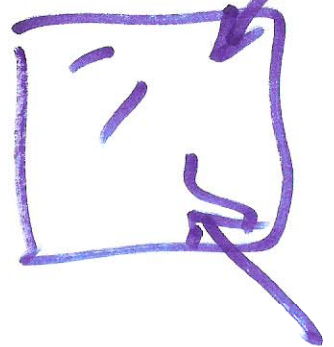
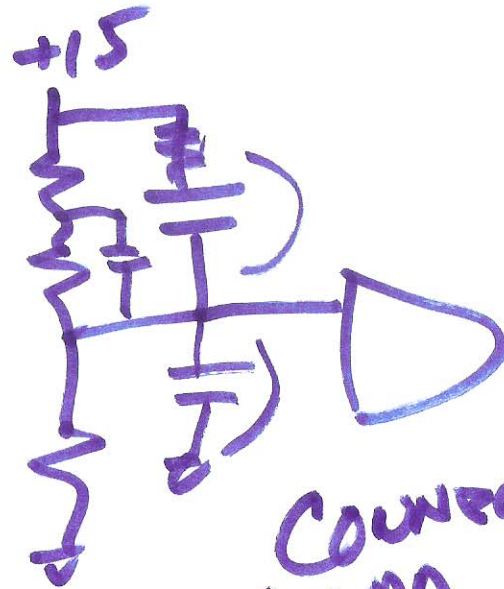
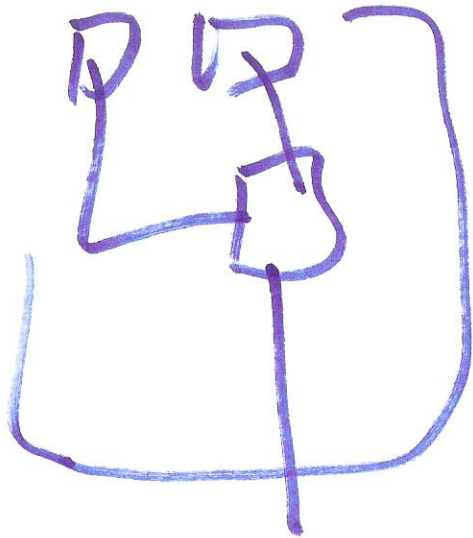


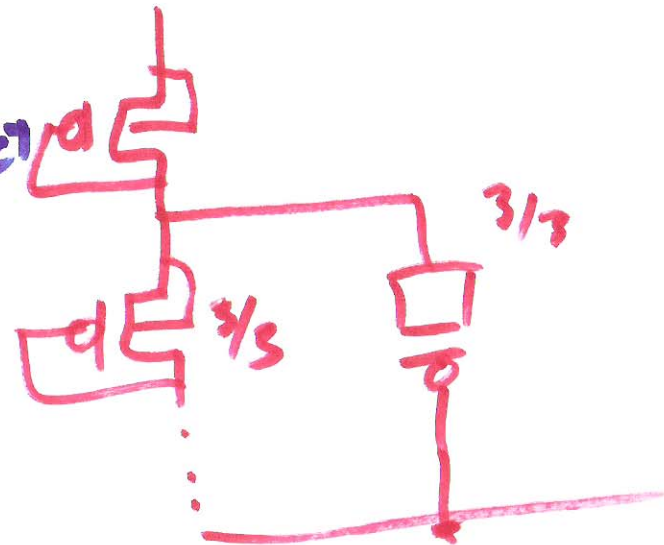
EE 421 / ECG 621

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Lecture 25

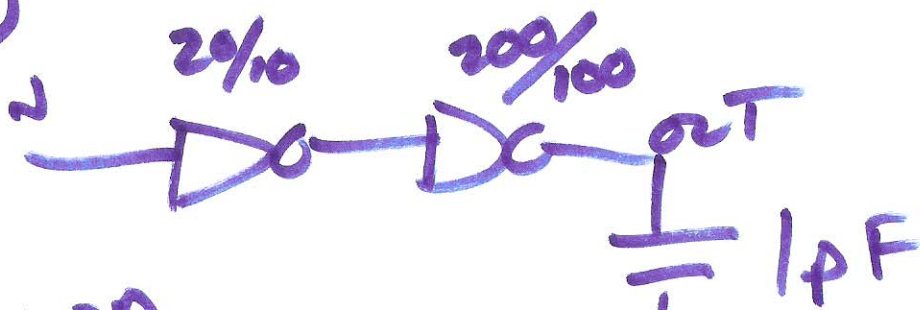


Counted
wood
here

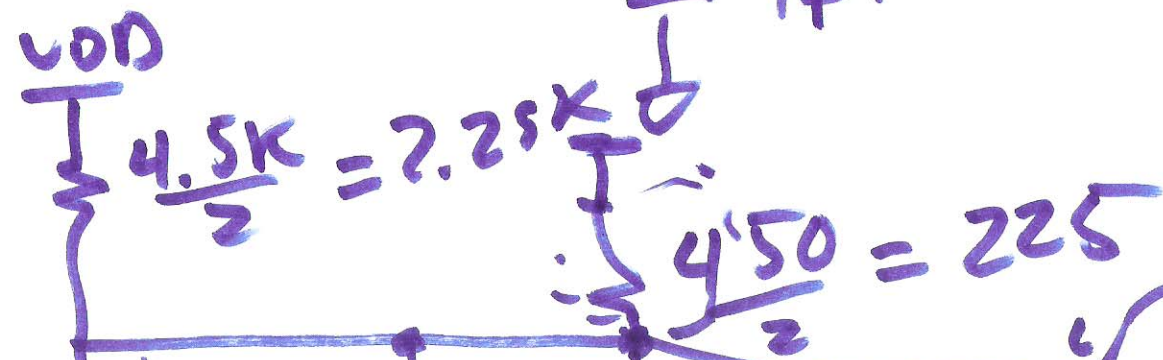


Can't
GND here

A13.4)



$15K$
 $45K$
 $1.75 \frac{45}{4-2} = C_{in}$



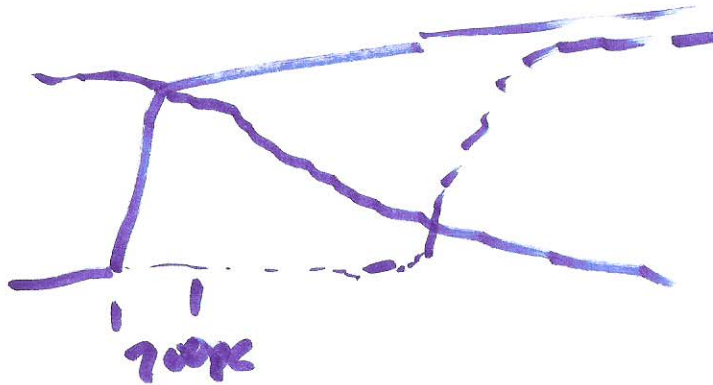
$1.5K$
 150
 $1 pF + 175 fF + 350 fF$

$17.5 fF + 35 fF$
 $+ \frac{3}{2} (175 fF + 35 fF)$

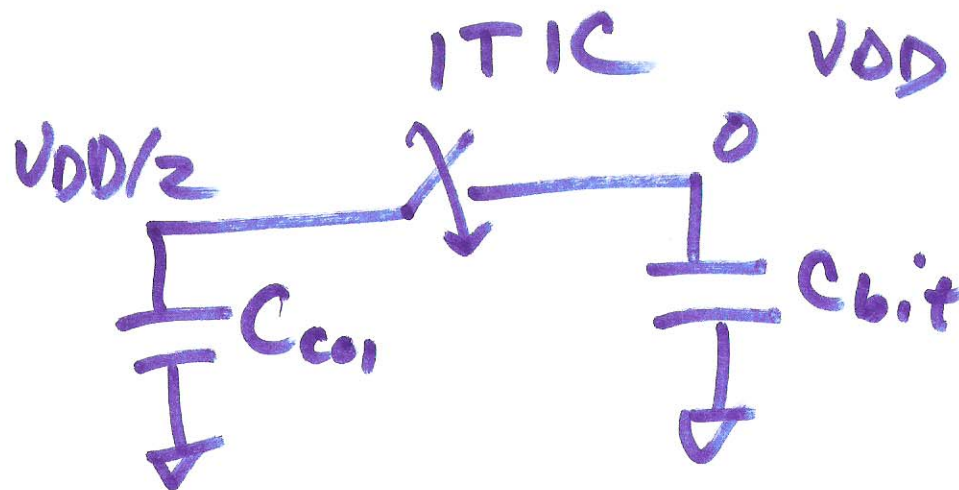
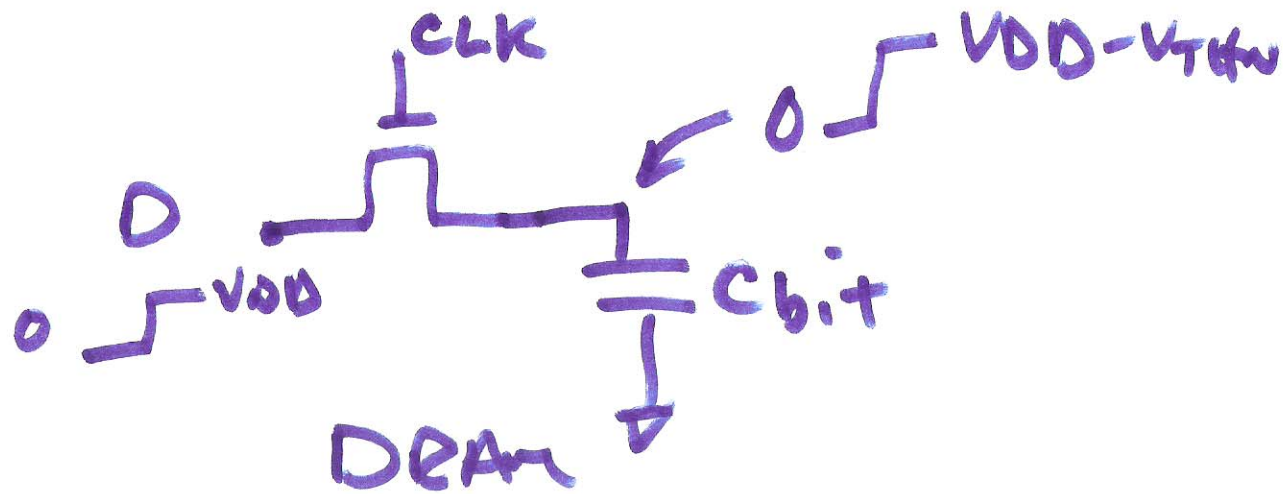
2)

$$t_{pLH} = 0.7 \left[1.5k (830fF) + 225 (1,525fF) \right] = \underline{\underline{1.11ns}}$$

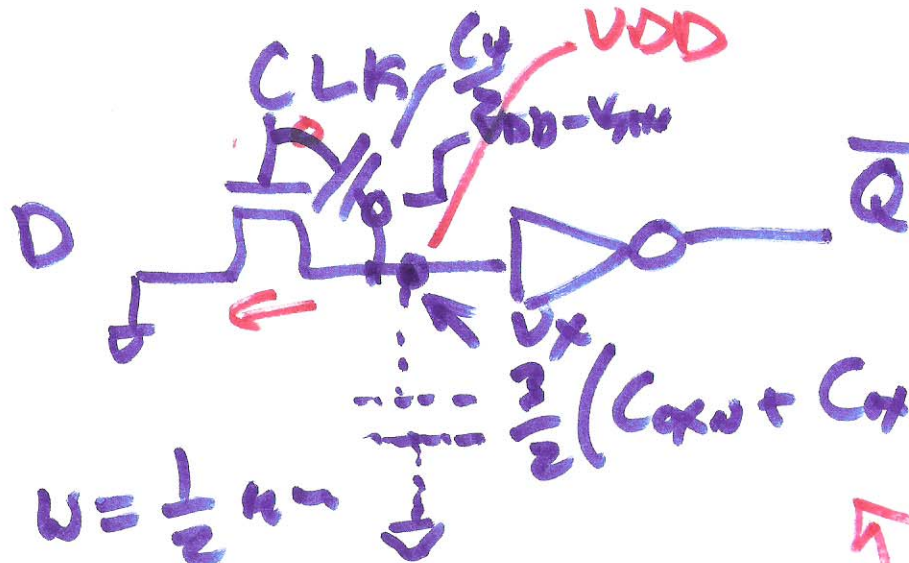
$$t_{pHL} = 0.7 \left[2.25k (830fF) + 150 (1.525pF) \right] = \underline{\underline{1.46ns}}$$



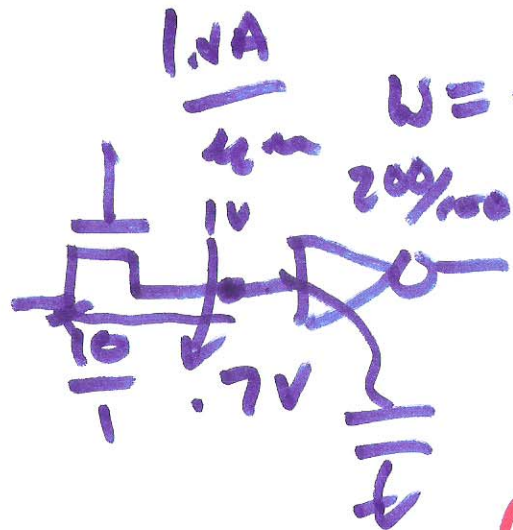
Dynamic logic



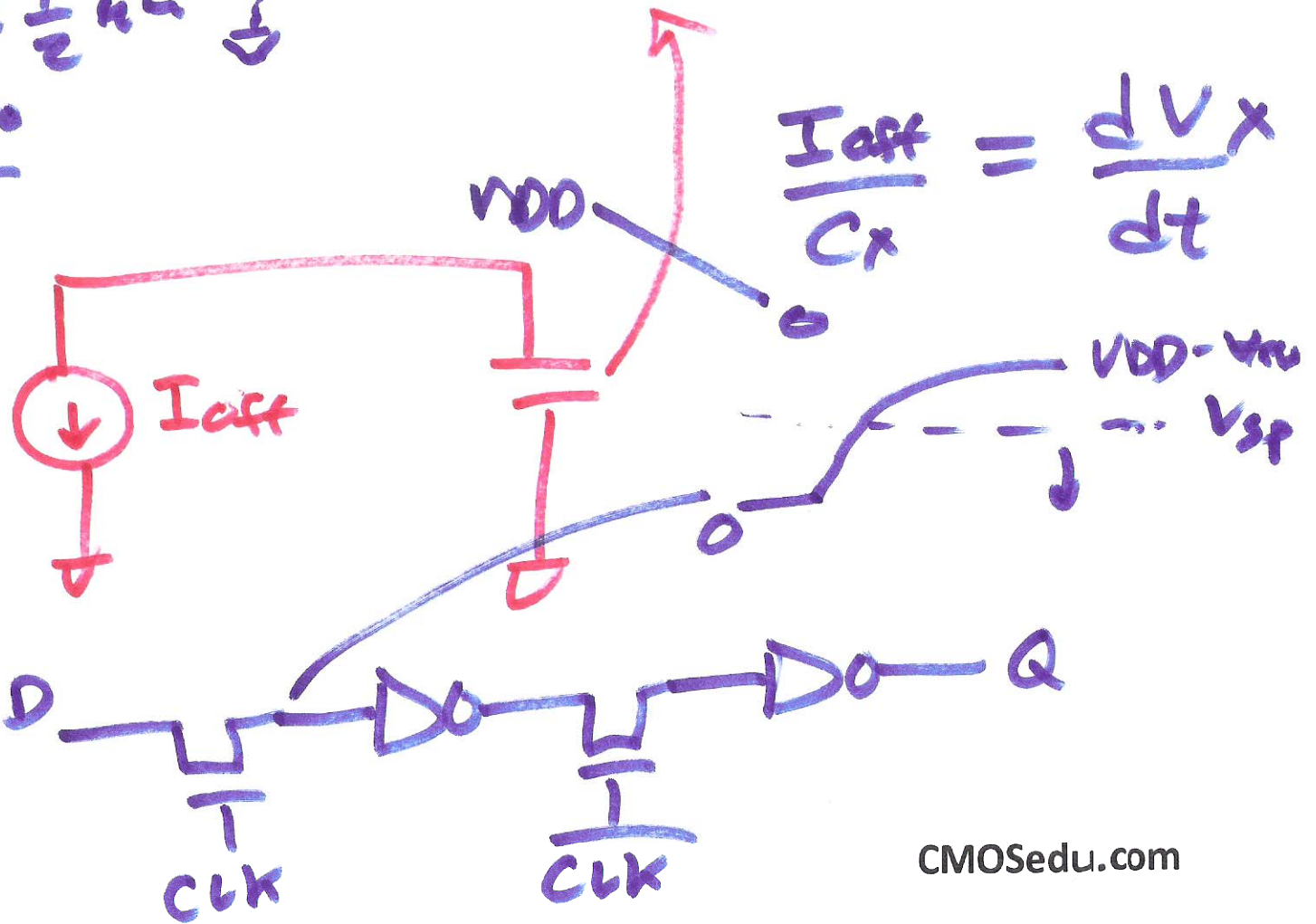
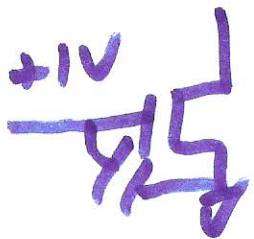
4)



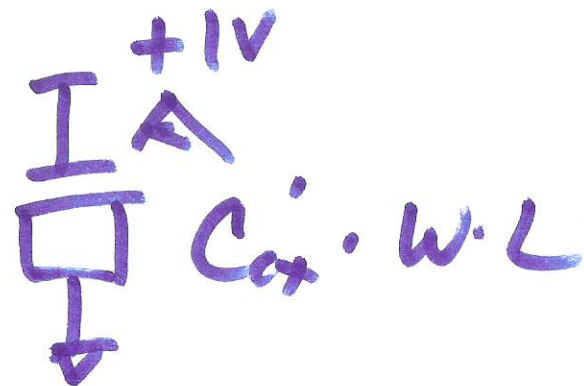
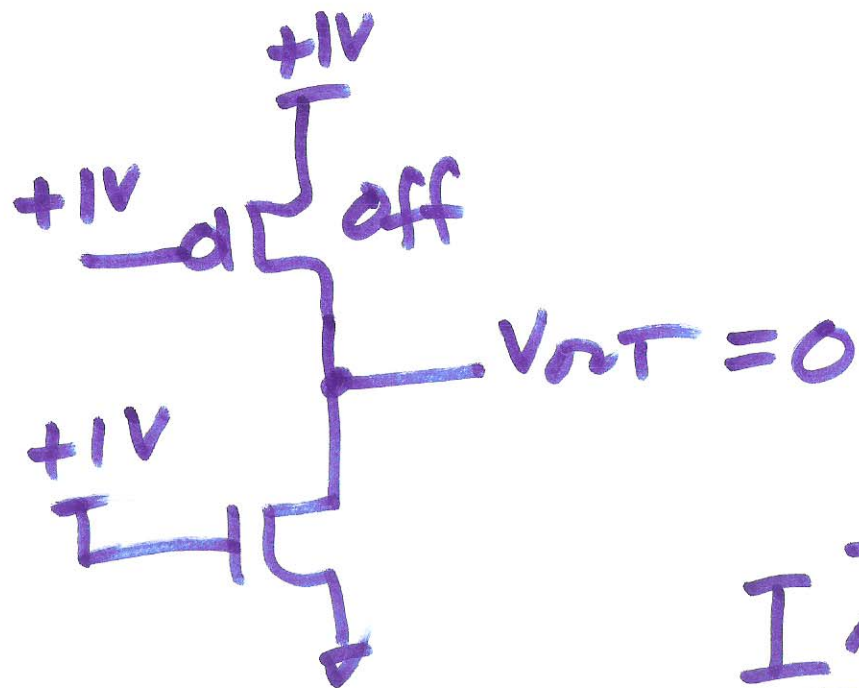
$$\frac{3}{2}(C_{oxn} + C_{oxp}) + \frac{C_{x1}}{2} = C_x$$



$$C_{ox} \cdot W \cdot L$$



$$\frac{I_{off}}{C_x} = \frac{dV_x}{dt}$$



Clocked CMOS logic

