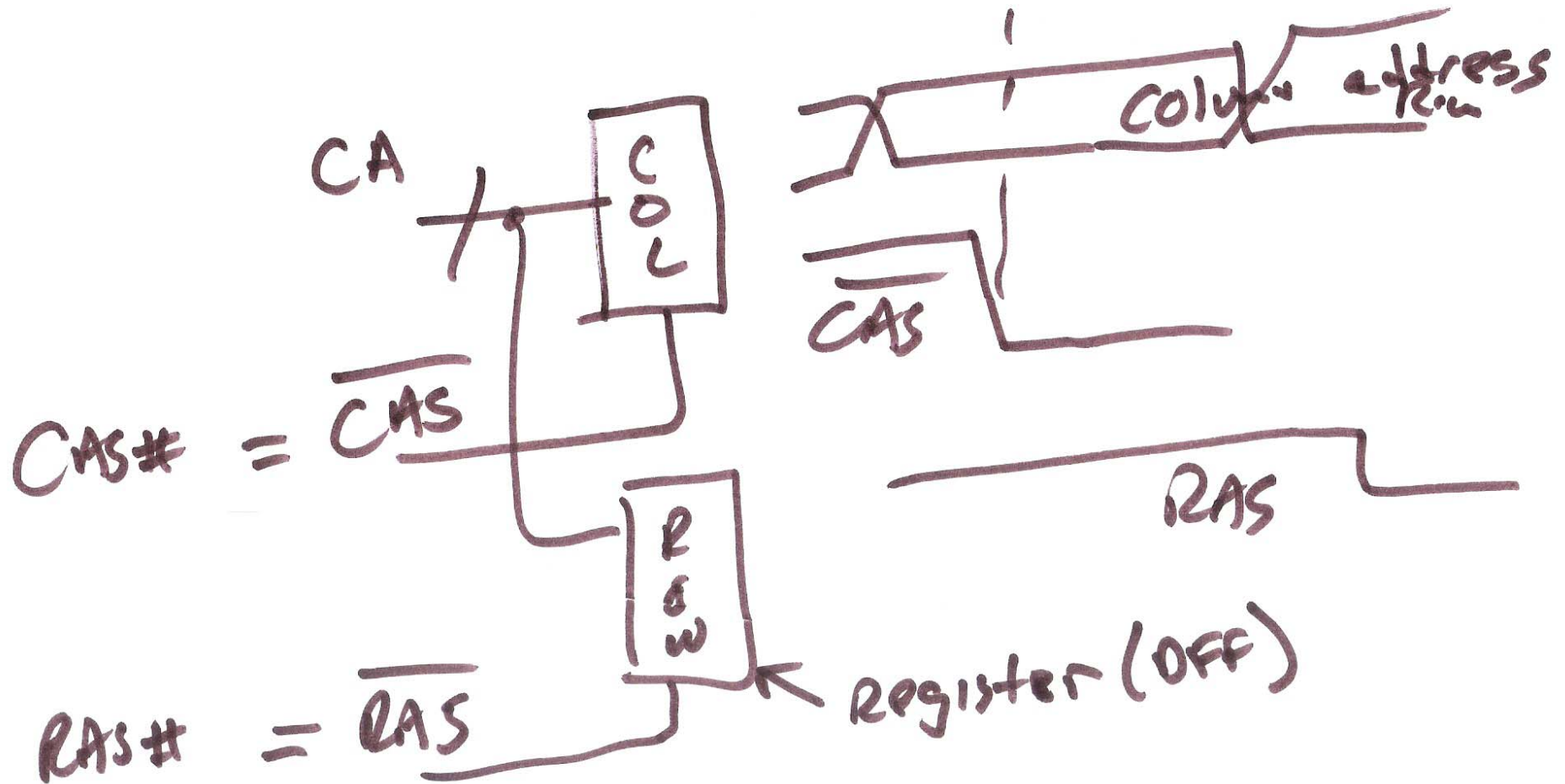


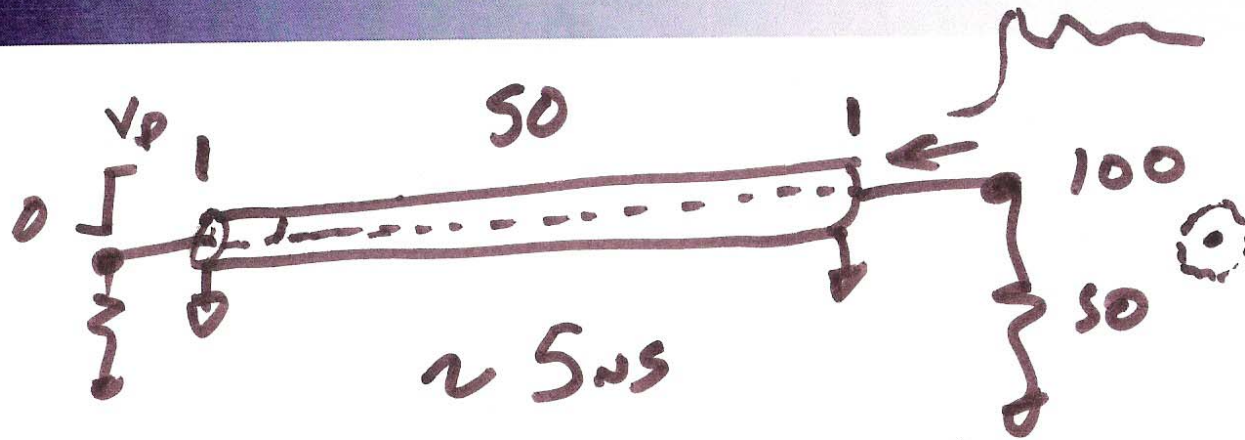
Lecture 10

2/23/10

Problem A16.12 due Monday Feb. 28, 2010

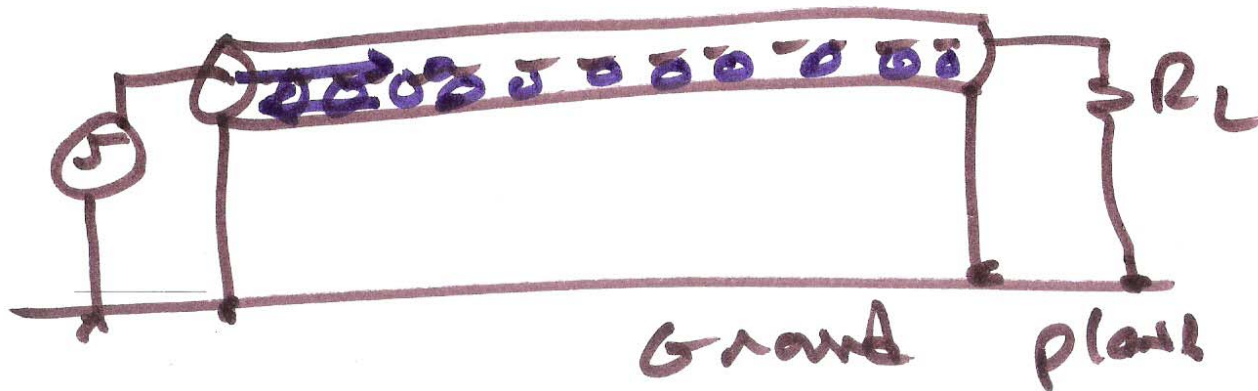


1)

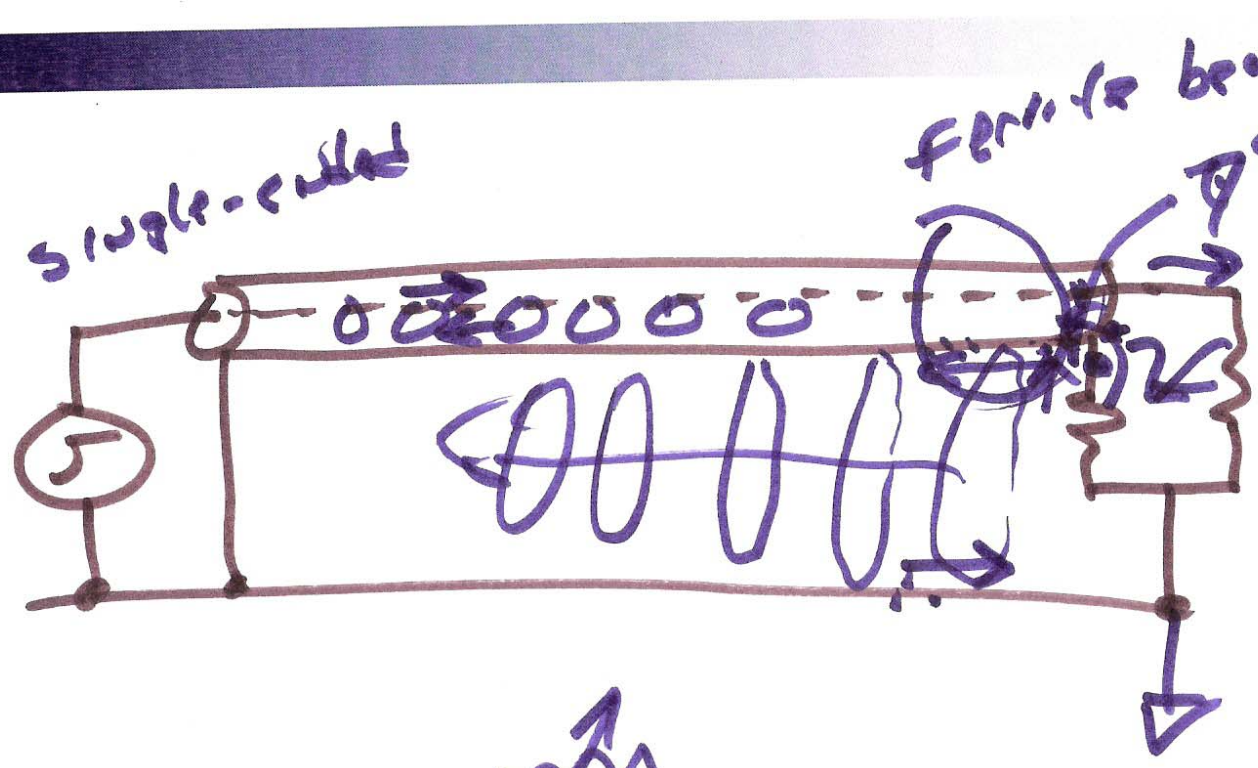


500 meters
2.5 ns

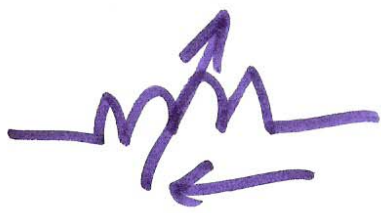
$$Z_0 = 377$$



2)

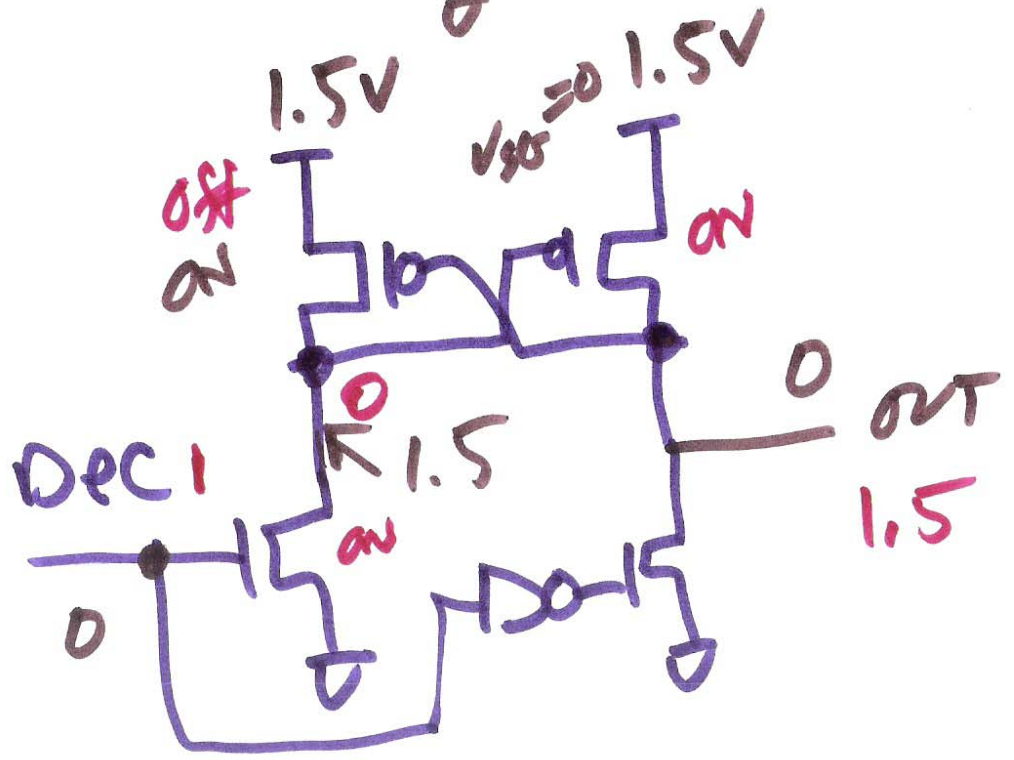
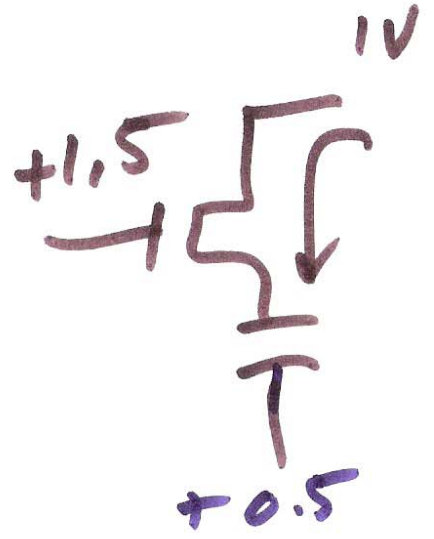
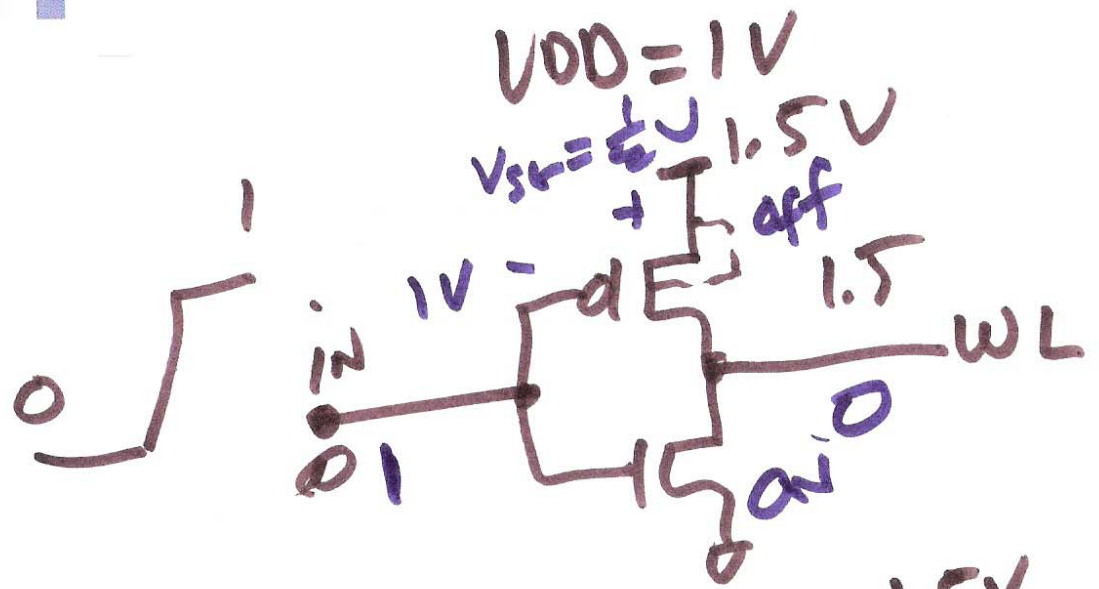


BALUN
Balanced to
unbalanced.

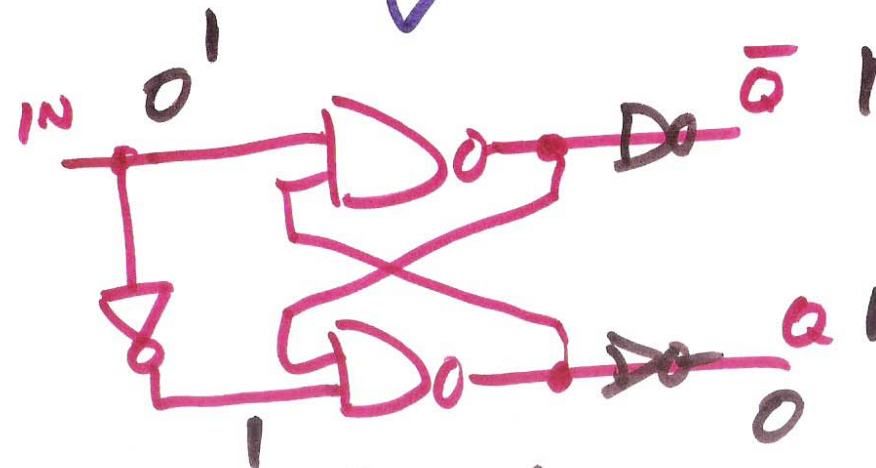
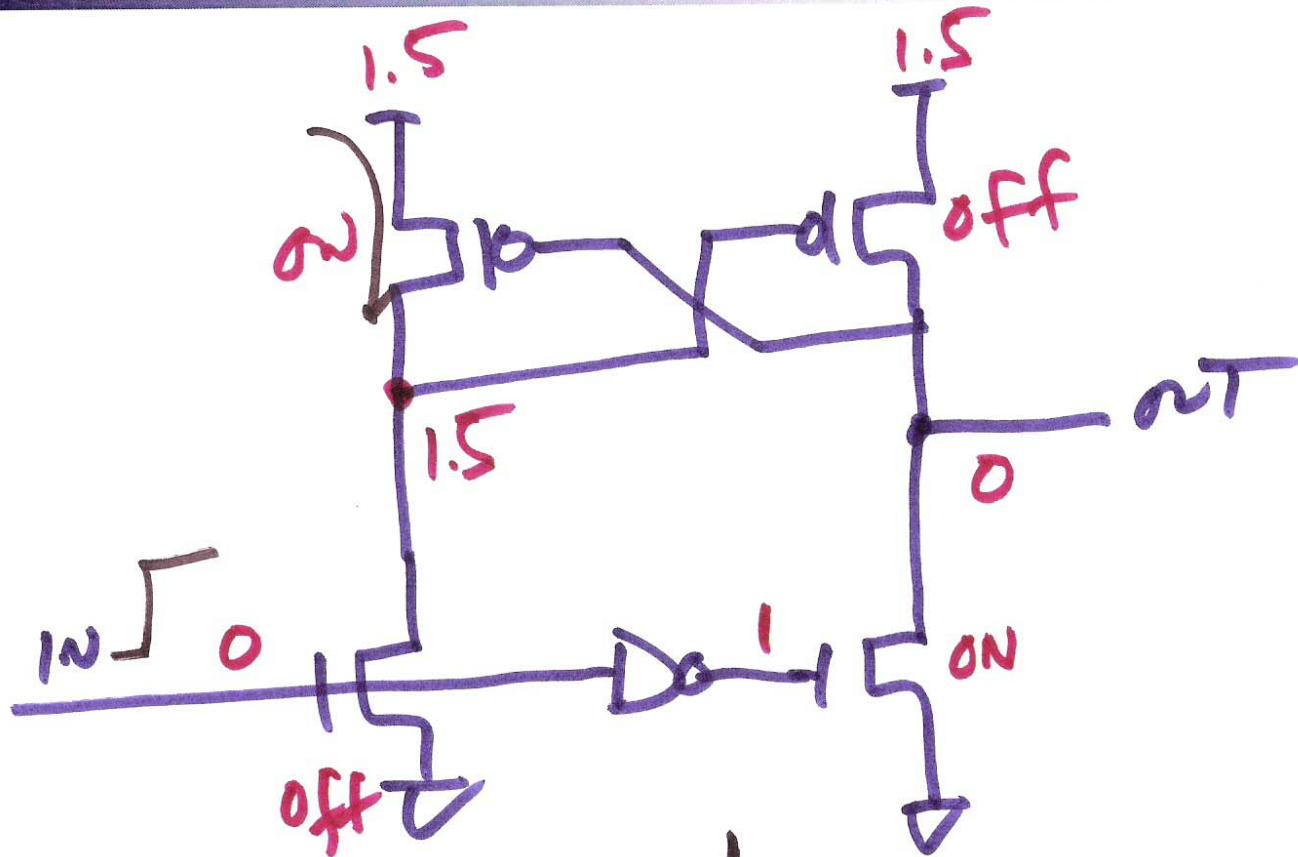


3)

word line drivers

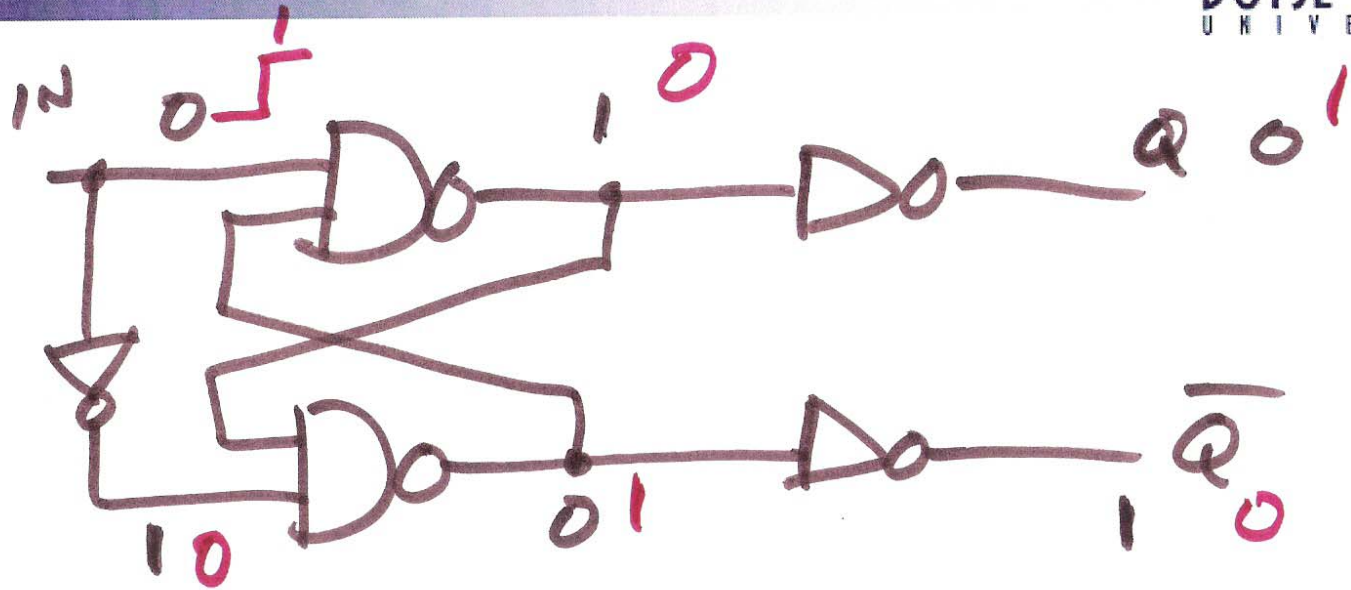


4)



NON-OVERLAPPING clock generators.

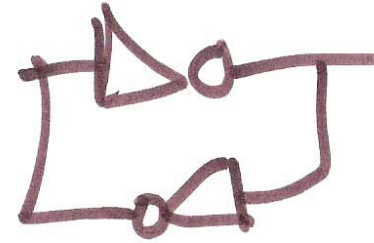
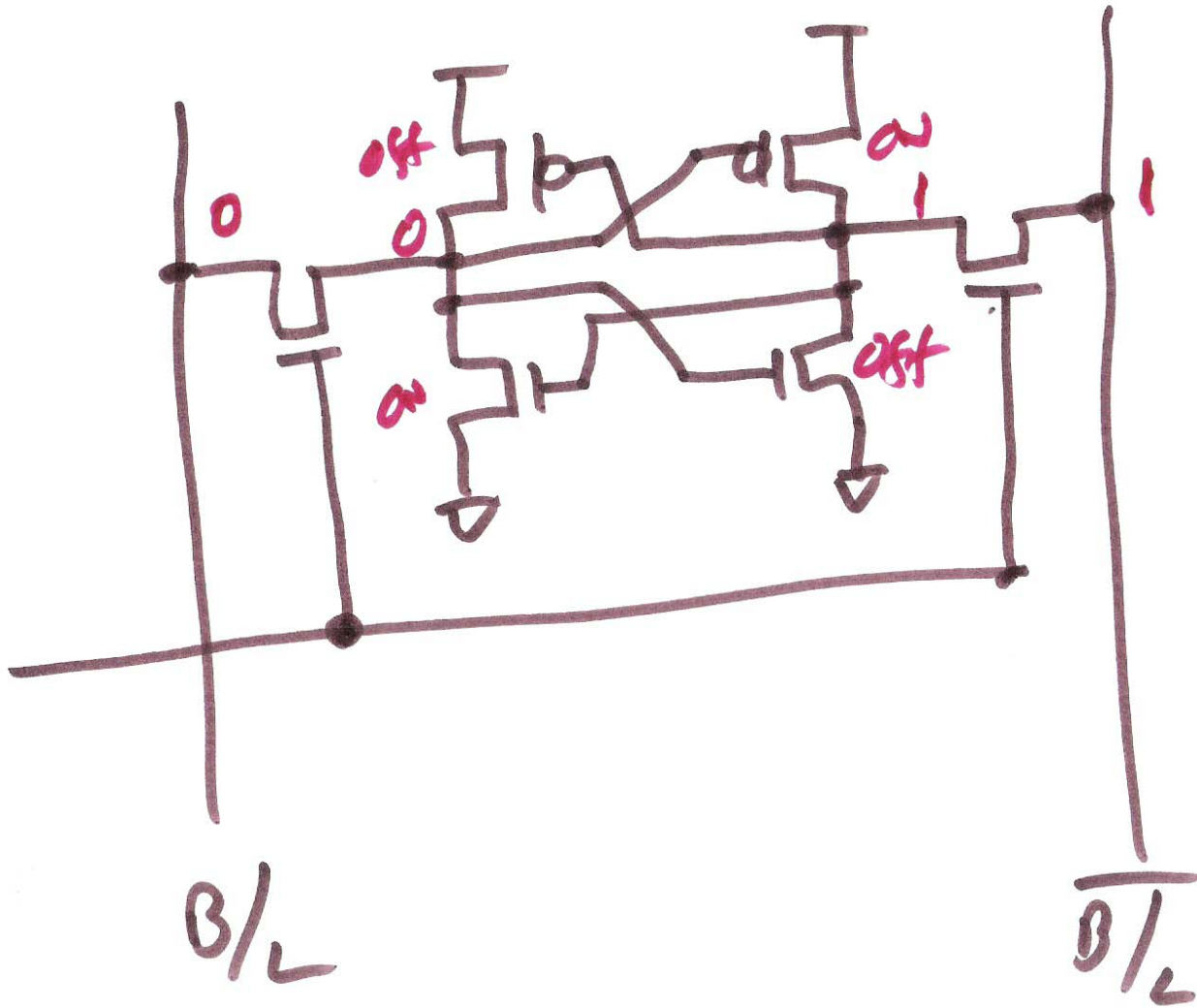
5)



6)

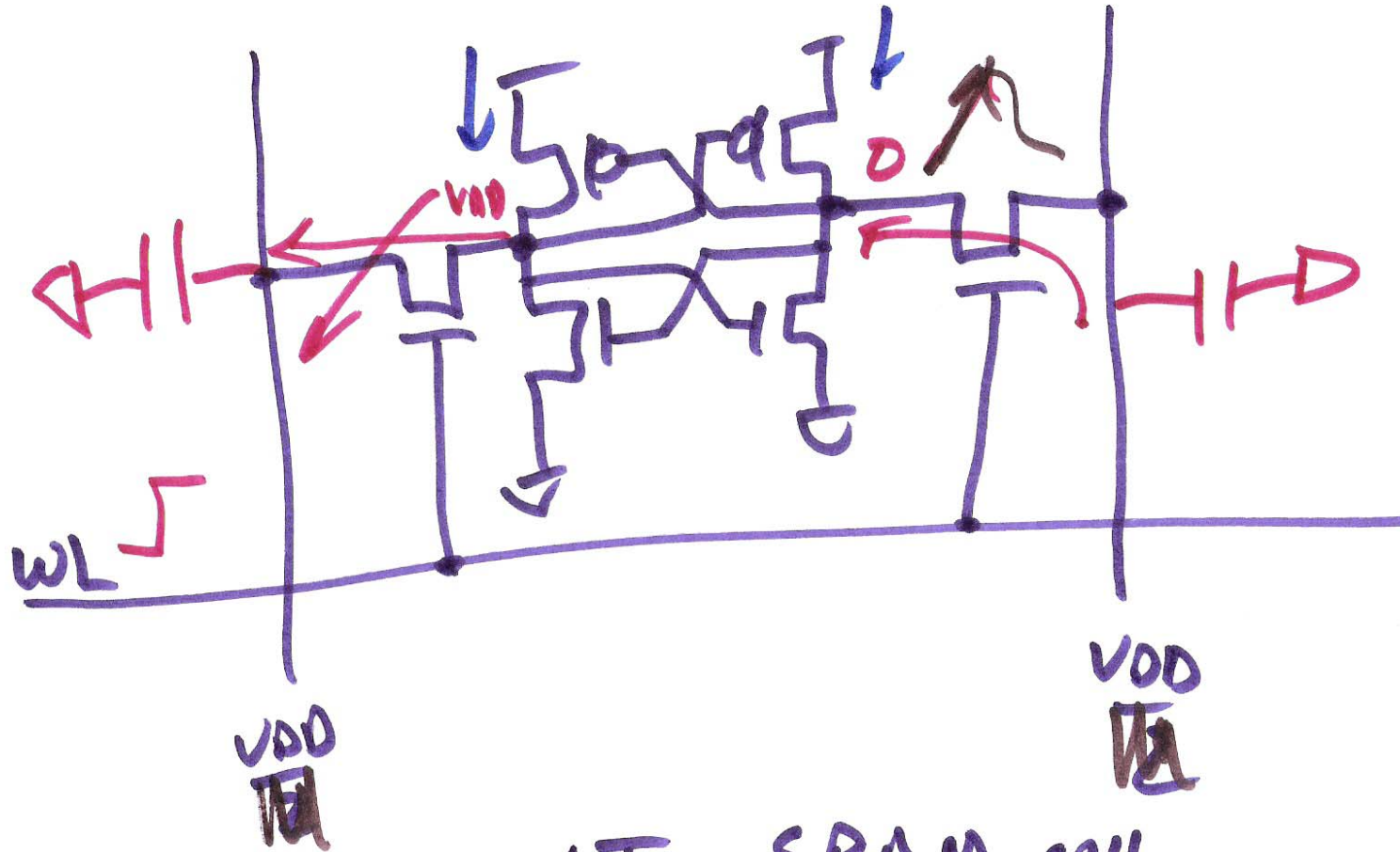
Static RAM

6T



pre-charge
Bitlines
high!

→

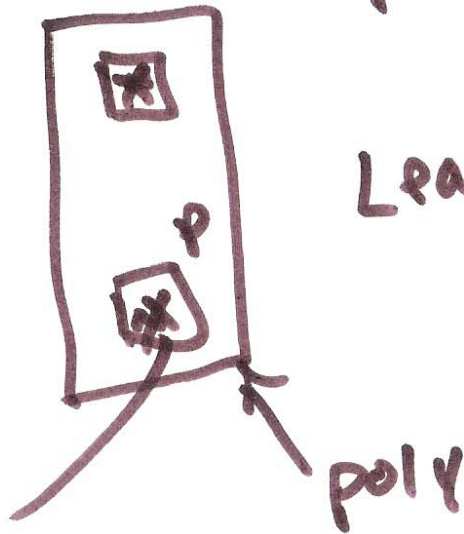


6T - SRAM cell

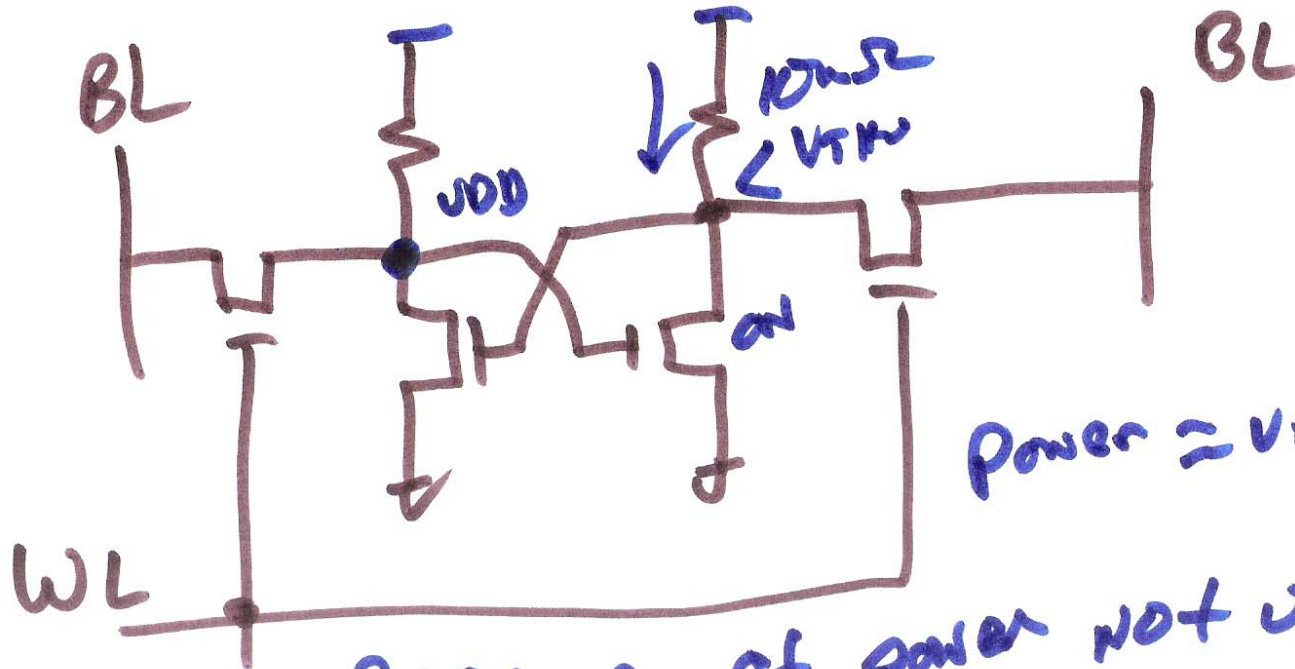
$$P_{\text{power}} = V_{DD} (I_{\text{effp}} + I_{\text{effn}})$$

poly pull-up resistor

Leaky PN junction $\sim 10M\Omega$



NO n-well

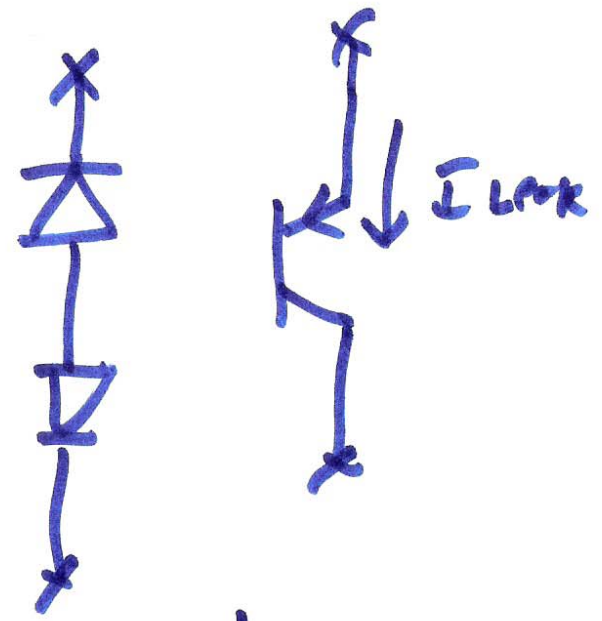
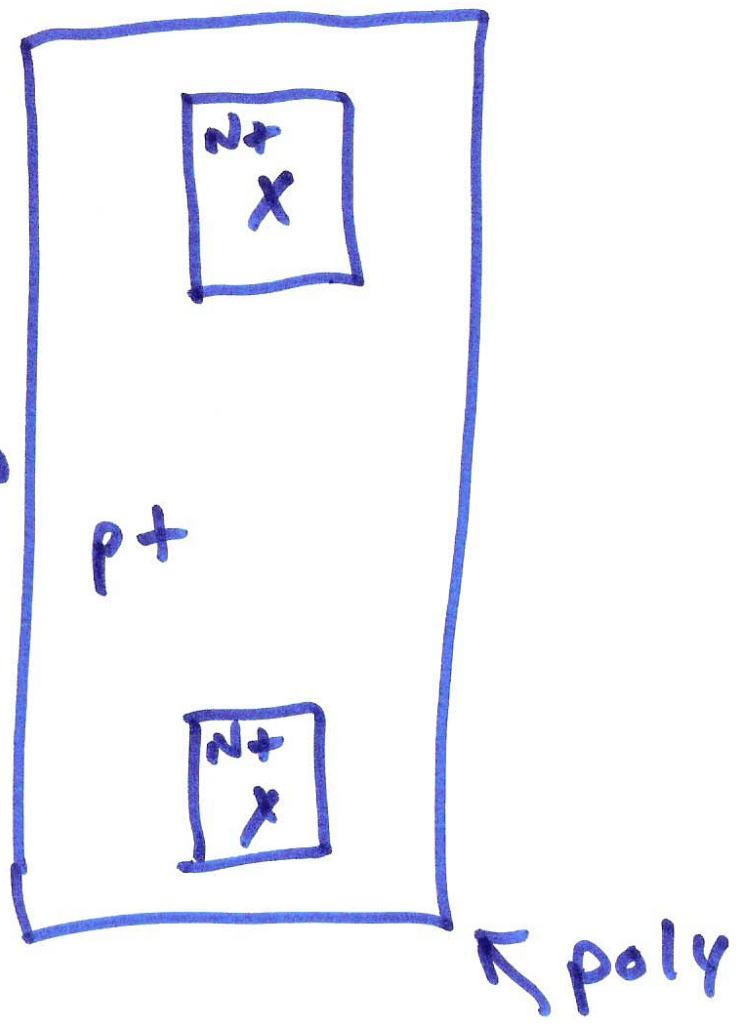
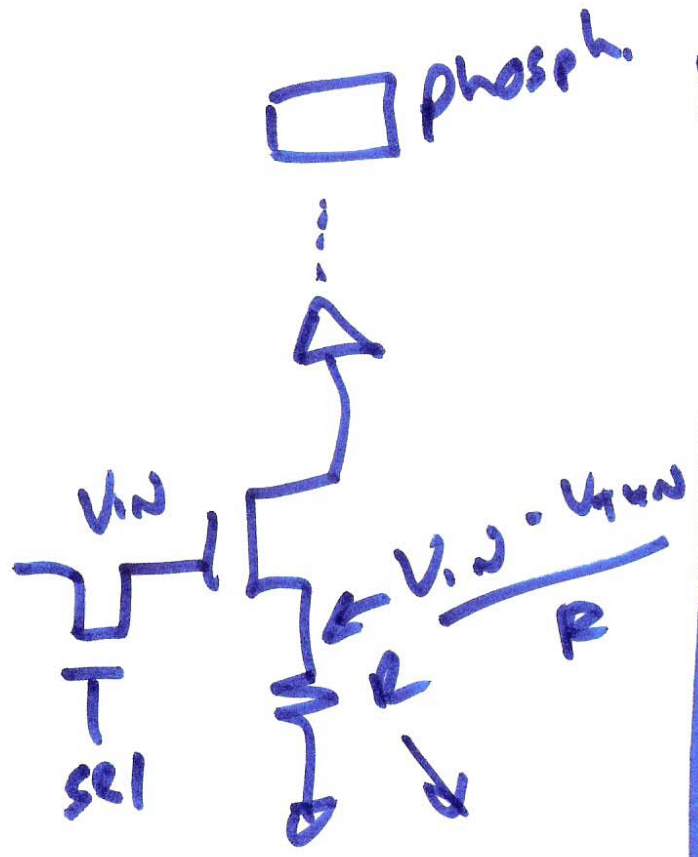


$$\text{Power} \approx VDD \cdot \frac{VDD}{10M\Omega}$$

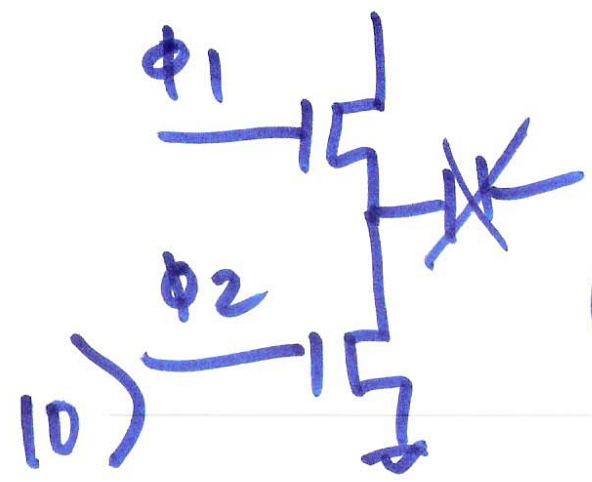
Because of power not used

a)

□ phosph.



not linear R
but
who cares



$$R = \frac{1}{fc}$$