

EE 421/ECG-621

Digital IC Design

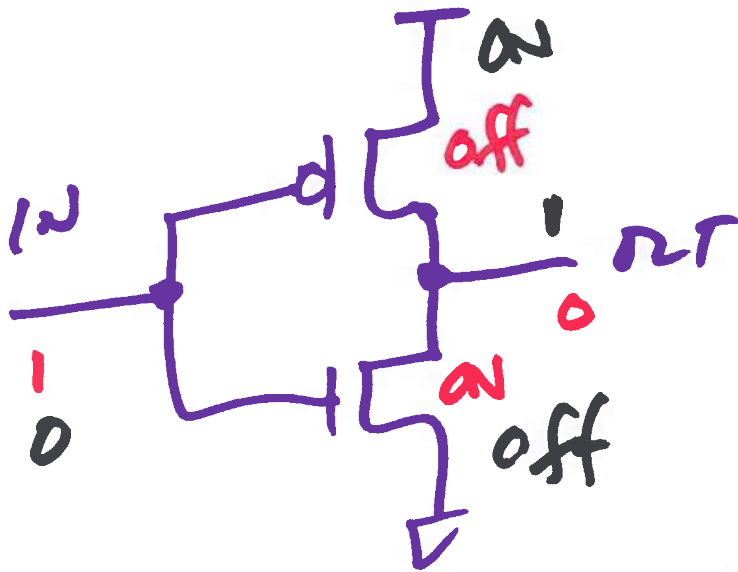
Lecture 15

Oct. 22, 2018

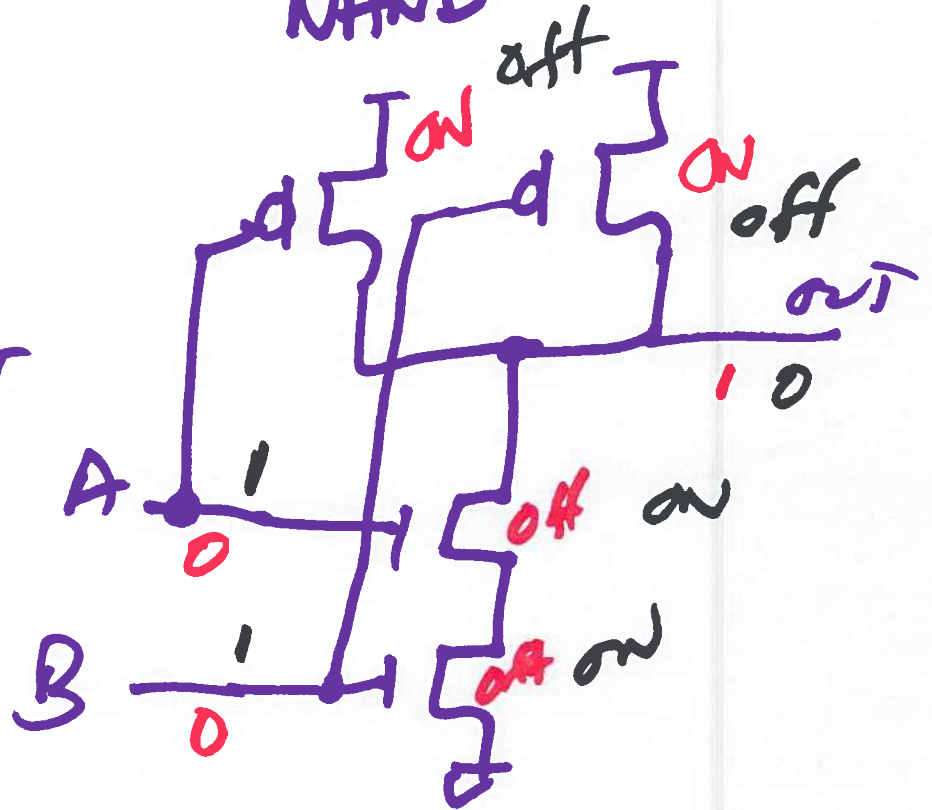
1. log out all sessions
2. login with single session
3. do command `rm ~/*COS.log`  
`htop` `(NA) Tilda`

# Ch. 10 Digital Model

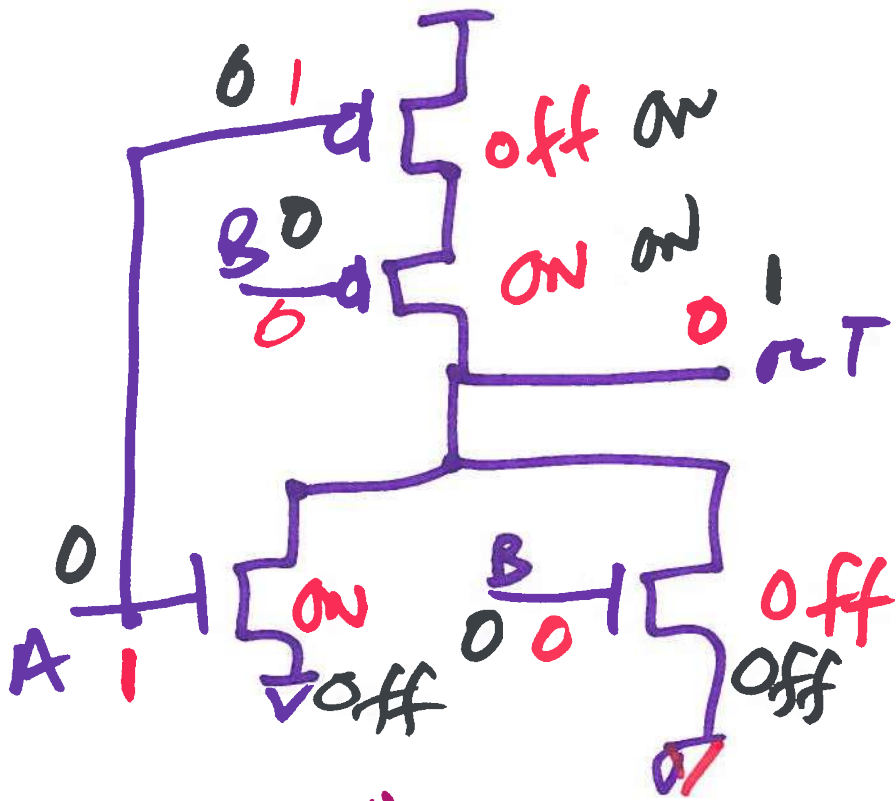
## Inverter



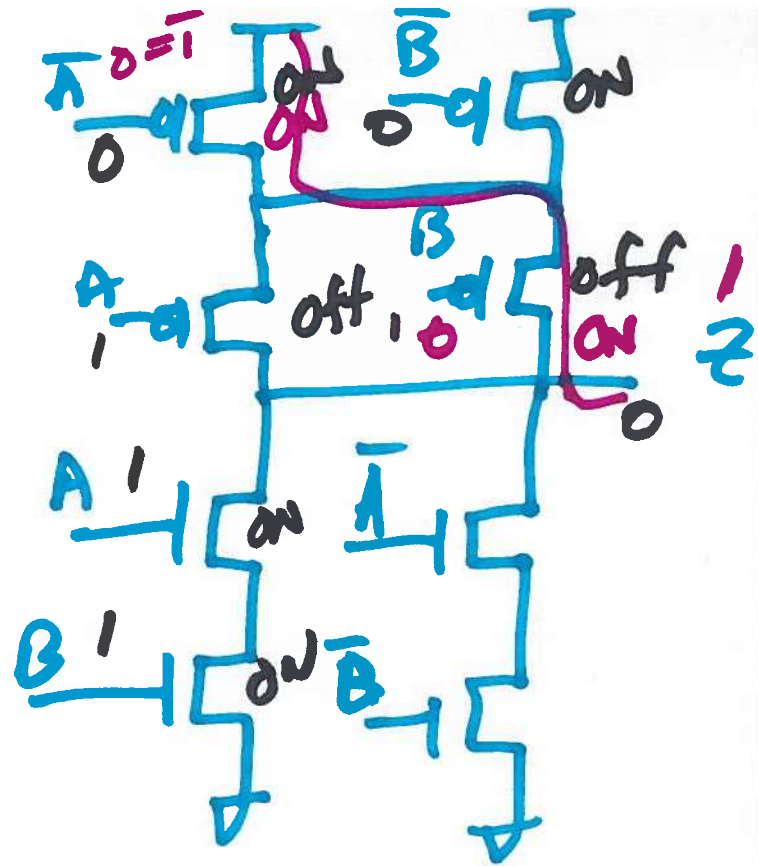
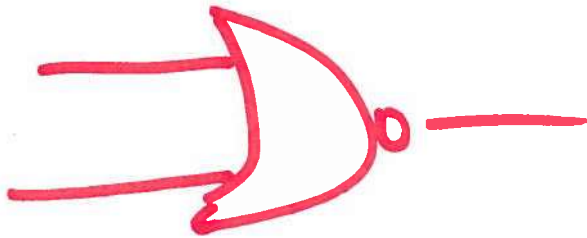
## NAND



2)



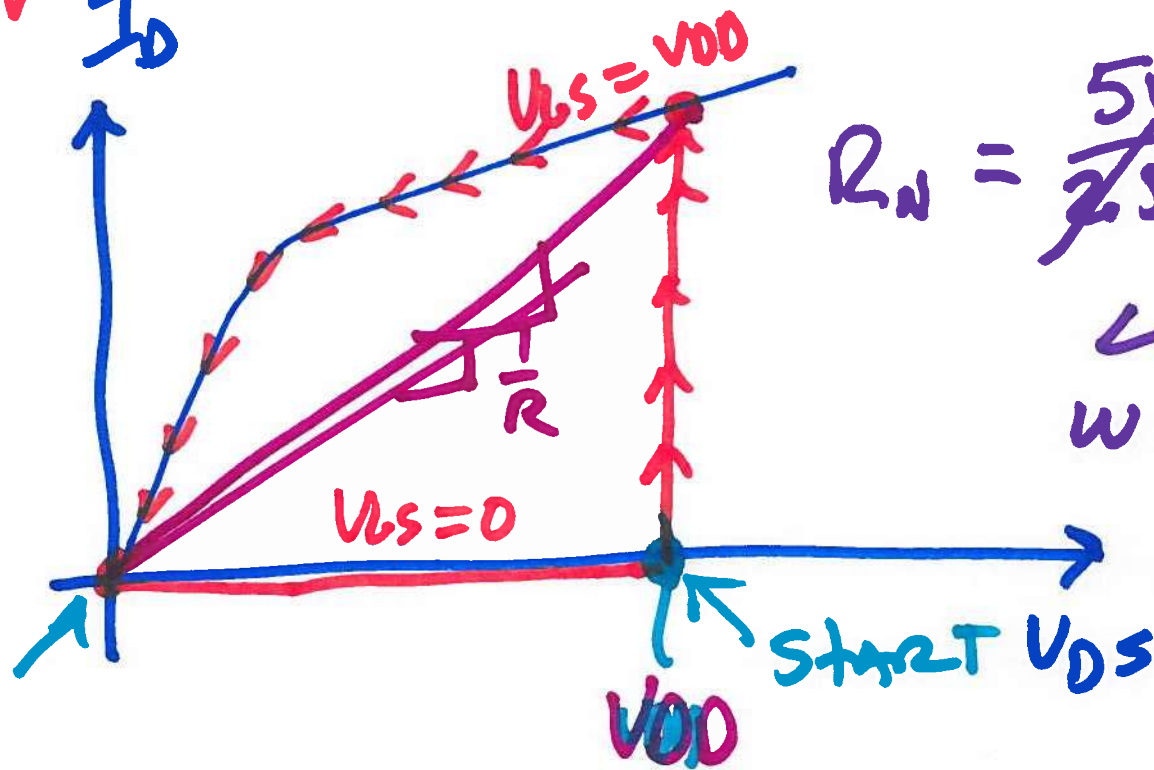
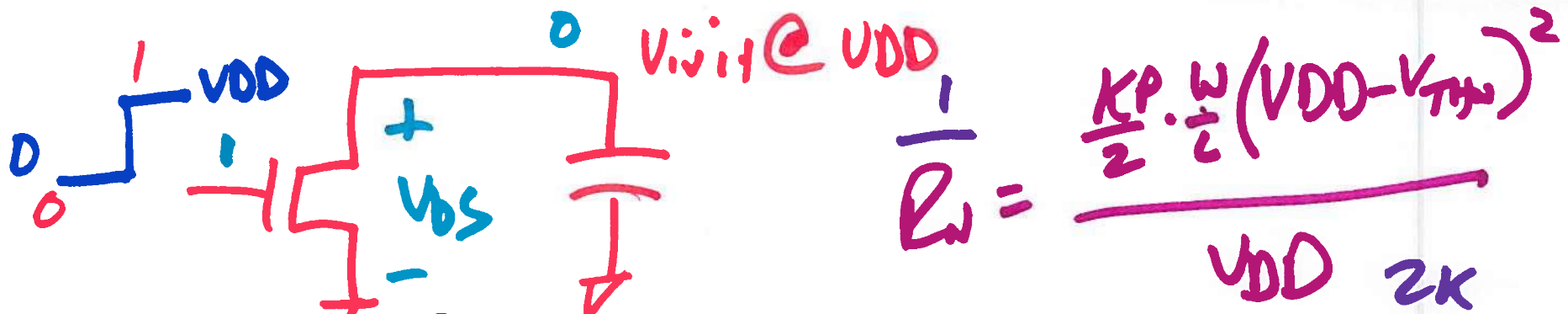
NAND



XOR



A	B	Z
1	1	0
0	1	1
1	0	1
0	0	0



$$R_N = \frac{5V}{2.5 \mu A} = R_N' \cdot \frac{L}{W}$$

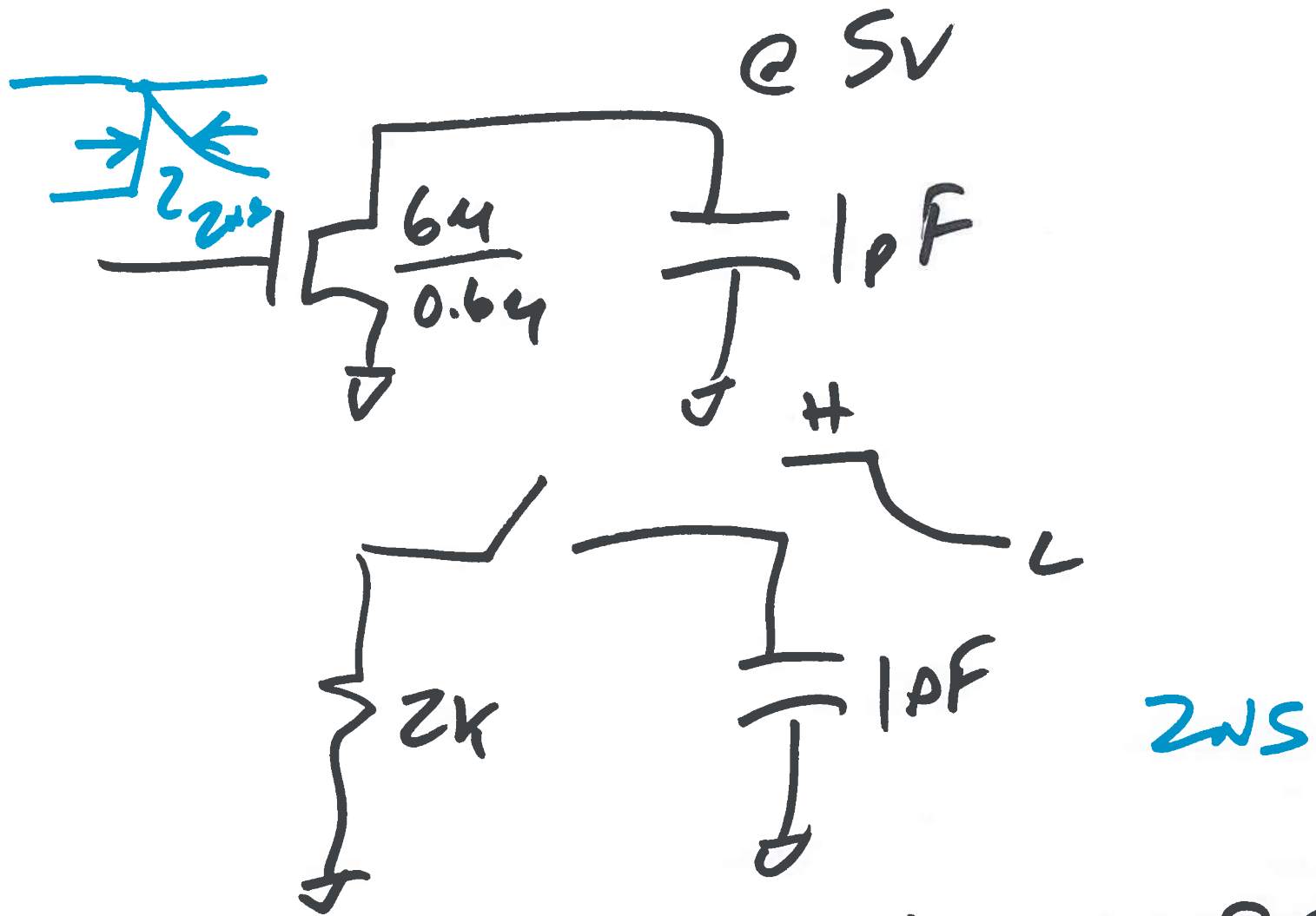
$$L = 0.64$$

$$W = 64$$

$$R_N' = 20k$$

$$R_N = 20k \cdot \frac{L}{W}$$

4)



$$t_d = t_{PHL} \approx RC$$

5)