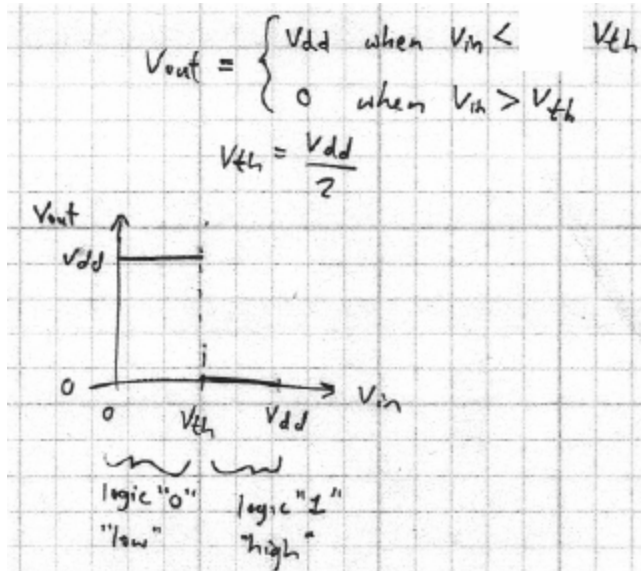
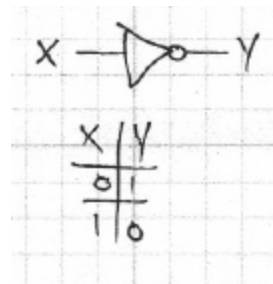
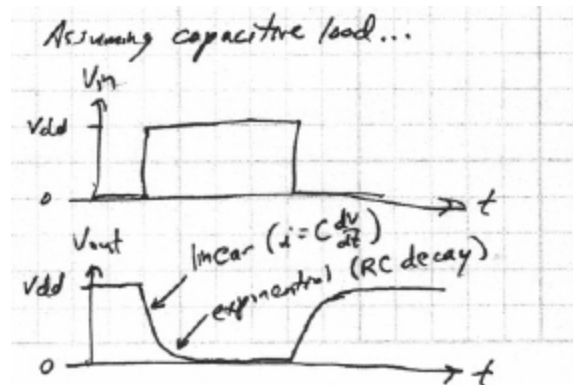
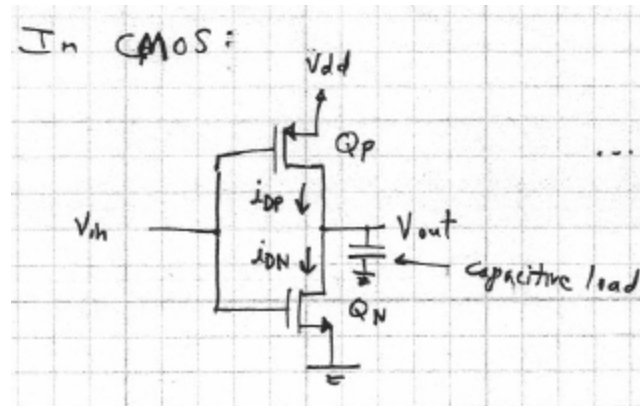


DIGITAL LOGIC

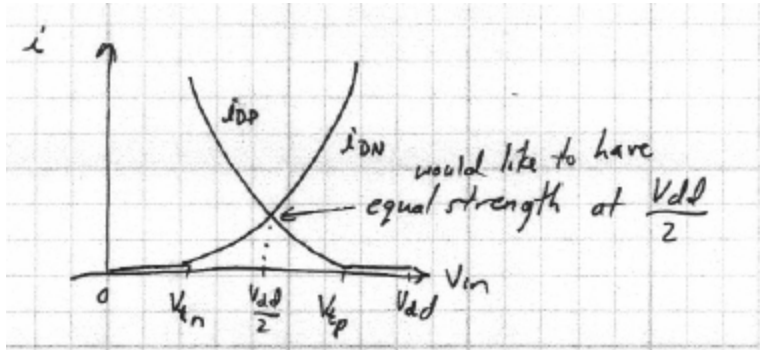
CMOS Inverter:



How is it built?



DIGITAL LOGIC

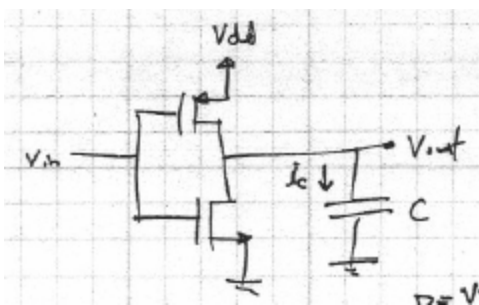
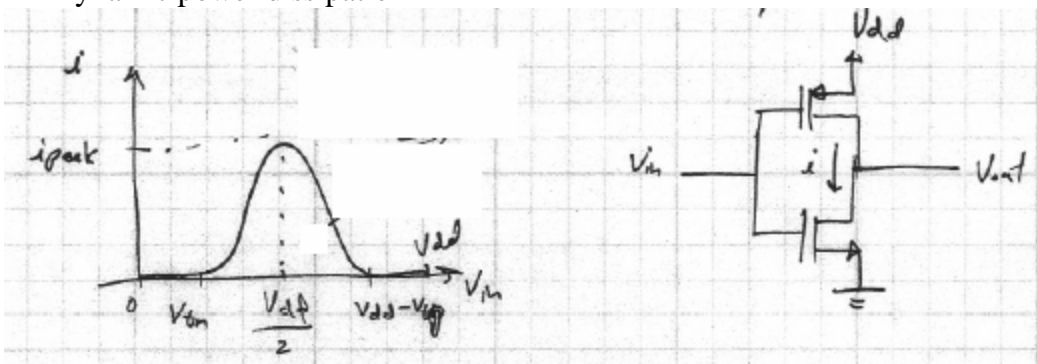


$$i_{DN} = \frac{1}{2} k'_n \left(\frac{W}{L}\right)_n (V_{GS} - V_{tn})^2$$

$$i_{DP} = \frac{1}{2} k'_p \left(\frac{W}{L}\right)_p (V_{GS} - V_{tp})^2$$

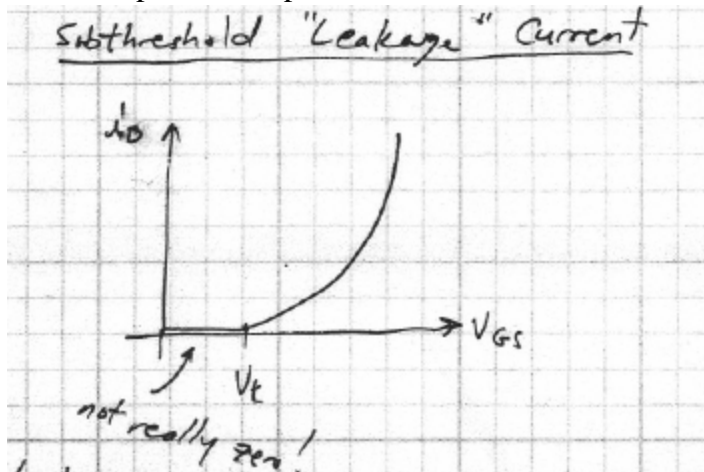
Power Dissipation:

- Dynamic power dissipation

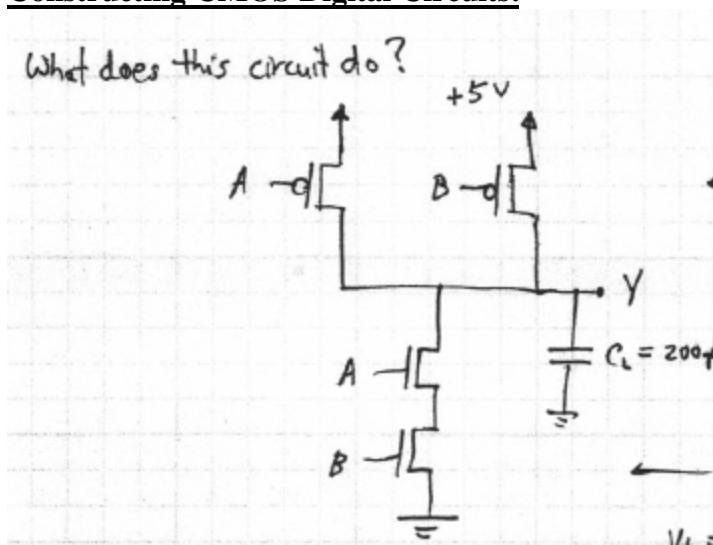


DIGITAL LOGIC

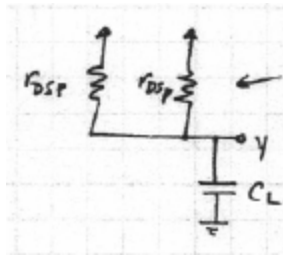
- Static power dissipation



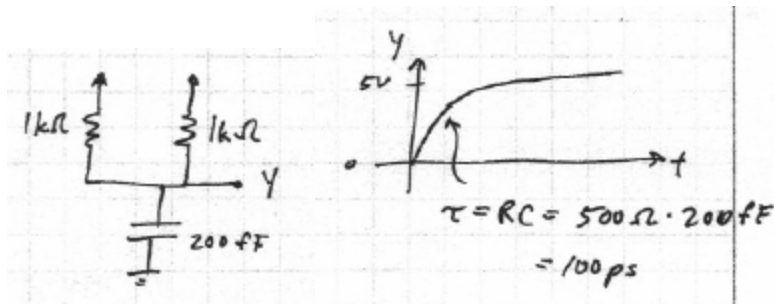
Constructing CMOS Digital Circuits:



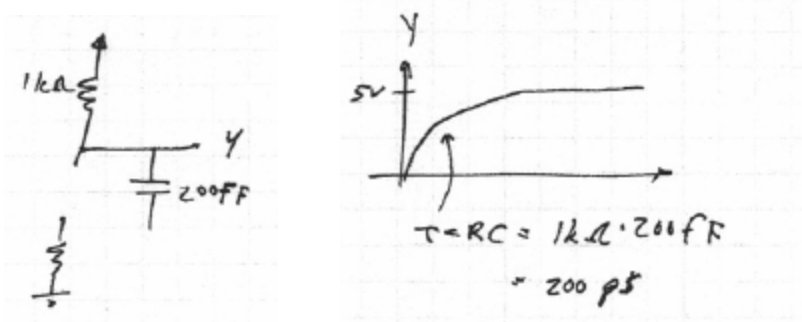
DIGITAL LOGIC



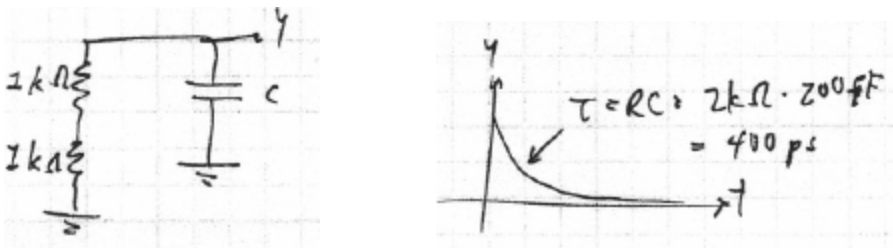
A=B=0=>



A=0, B=1=>

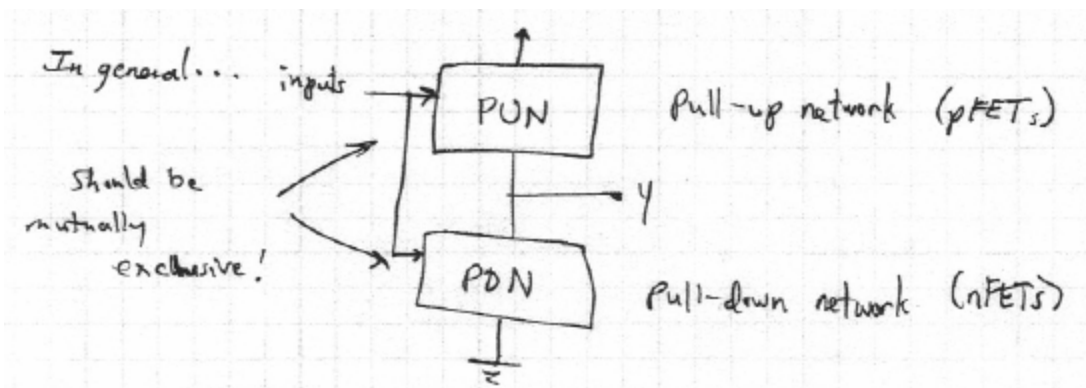
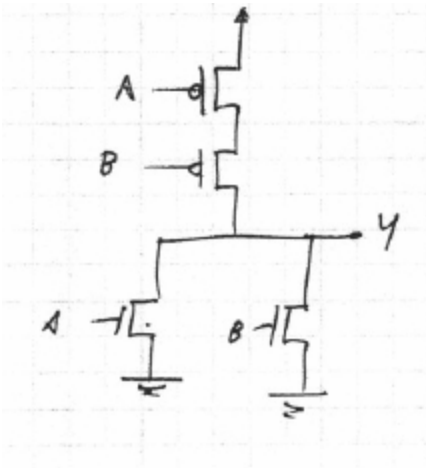


A=B=1



DIGITAL LOGIC

What is this circuit?



DIGITAL LOGIC

Example: $Y = \overline{A(B+CD)}$

