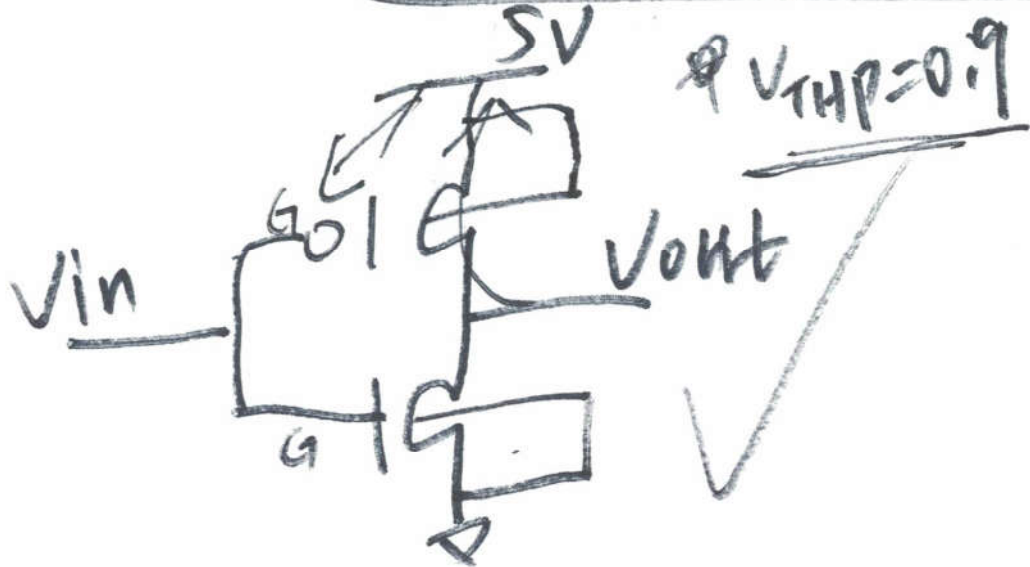
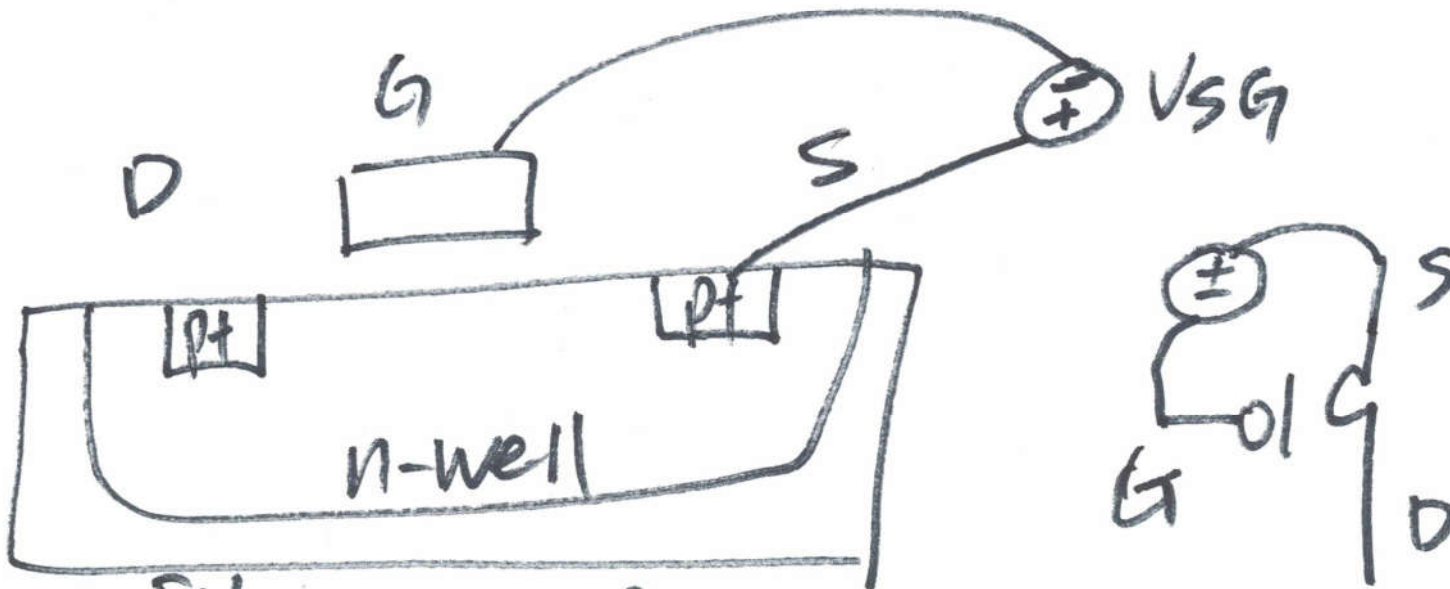
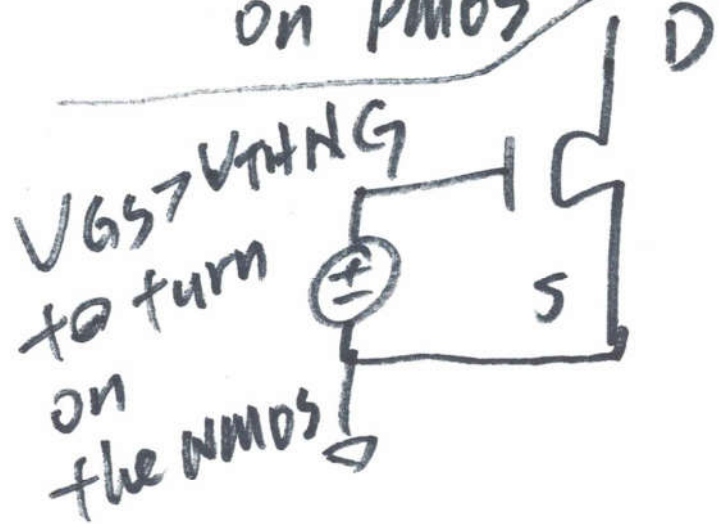
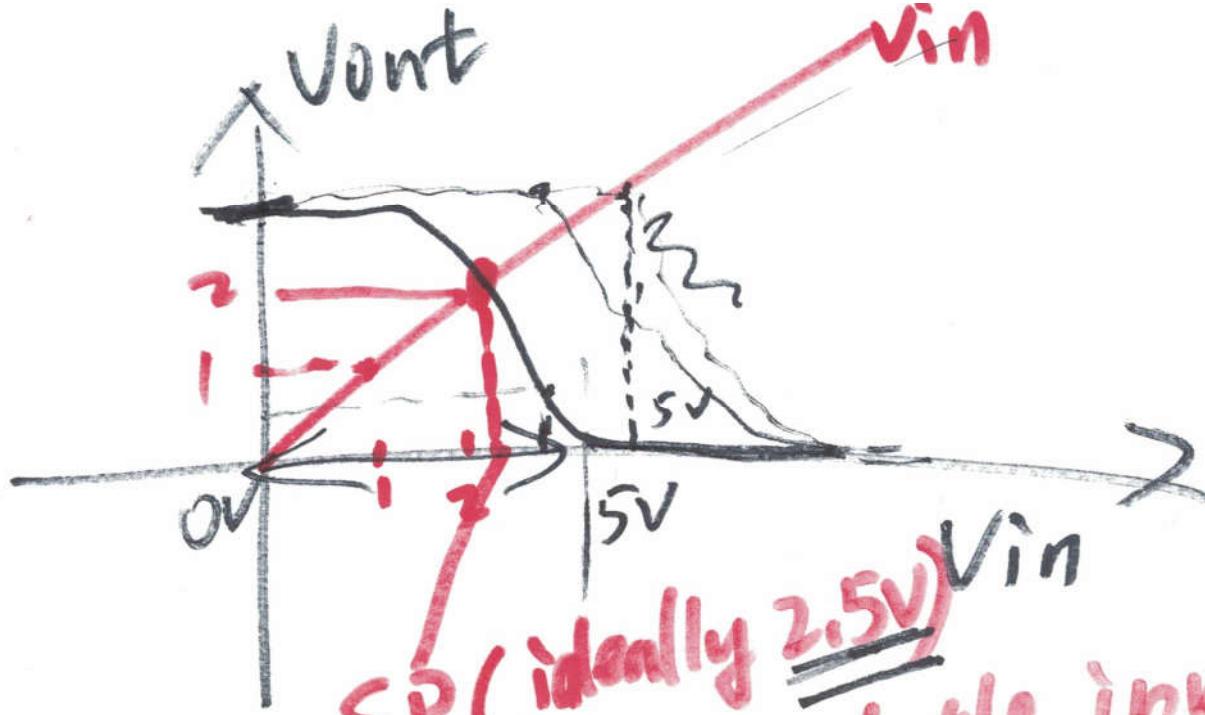


# PMOS



$V_{SG} > V_{THP}$  to turn on PMOS



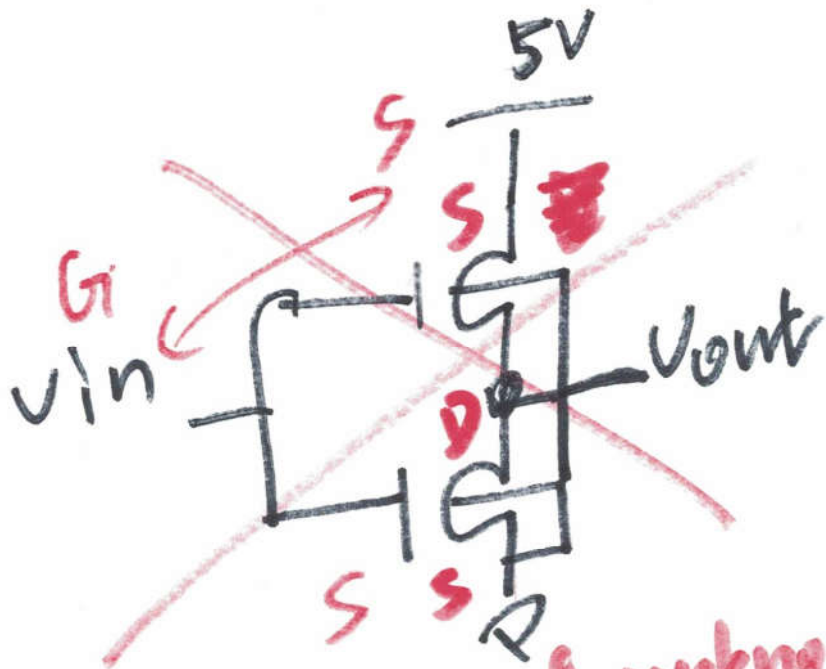


SP (ideally 2.5V)  
 Switch Point of the inverter

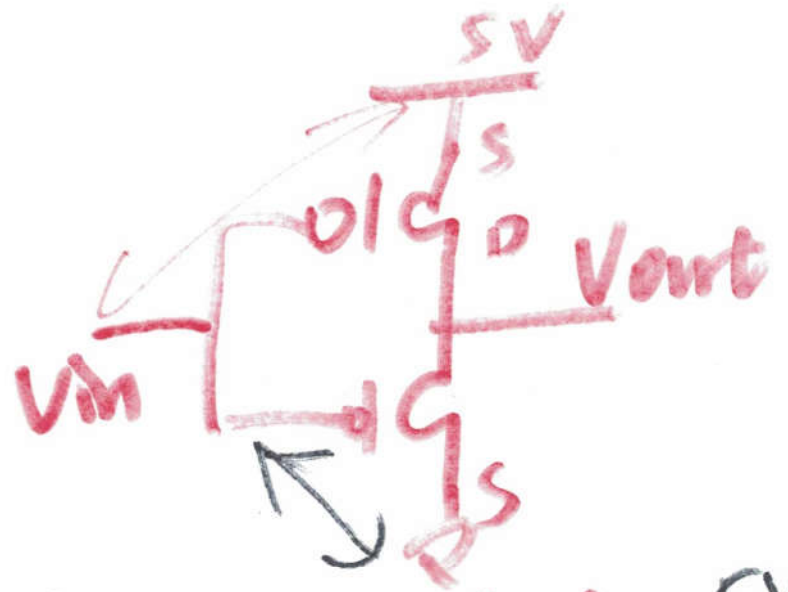
$$I_{DS} = \frac{K_P N}{2} \frac{W}{L} (V_{GS} - V_{THN})^2$$

→ charge W only  
 to change  $I_{DS}$  →  
 to change DC operating point

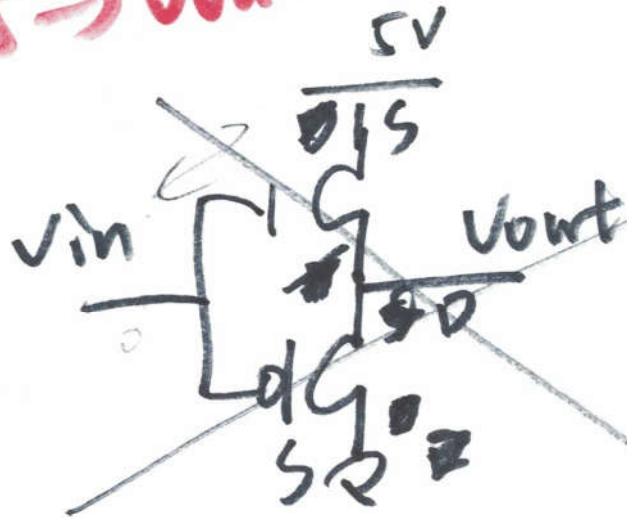
~~IO~~  $L = \text{minimum}$   
 $\lambda = 300 \text{ nm}$   
 $L_{\text{min}} = 2\lambda = \underline{\underline{600 \text{ nm}}}$



$\left\{ \begin{array}{l} v_{in} = 0 \rightarrow v_{out} = \text{unknown} \\ v_{in} = 5 \rightarrow v_{out} = 0V \end{array} \right.$



$\left\{ \begin{array}{l} v_{in} = 0 \rightarrow v_{out} = 5V \\ v_{in} = 5 \rightarrow v_{out} = \text{unknown} \end{array} \right.$



$v_{in} = 0 \rightarrow v_{out} = \text{unknown}$

3