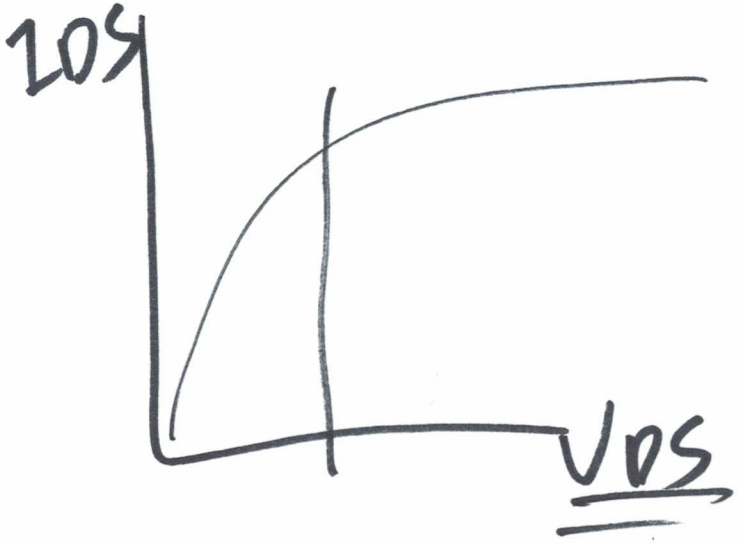
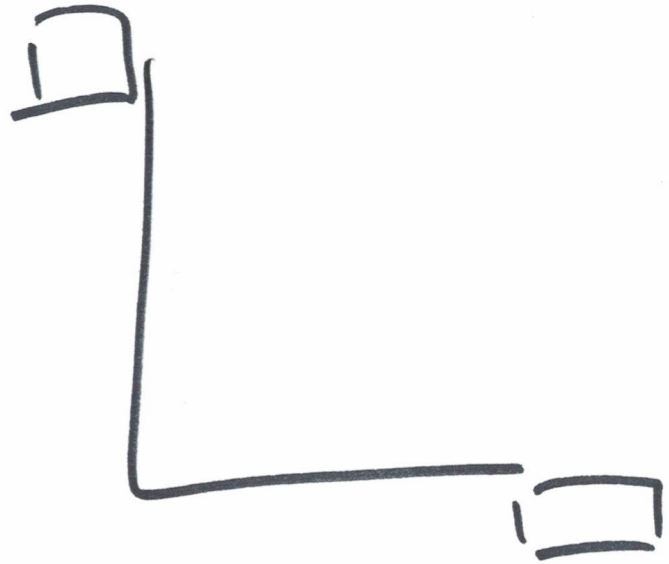
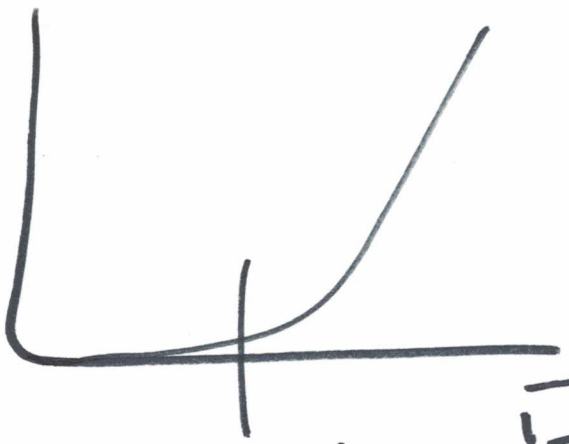
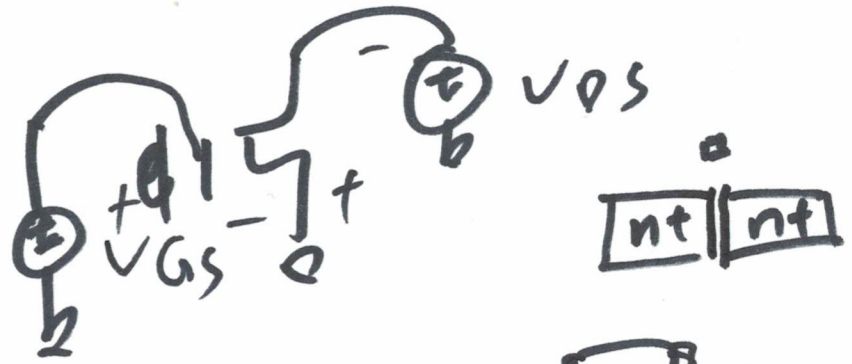
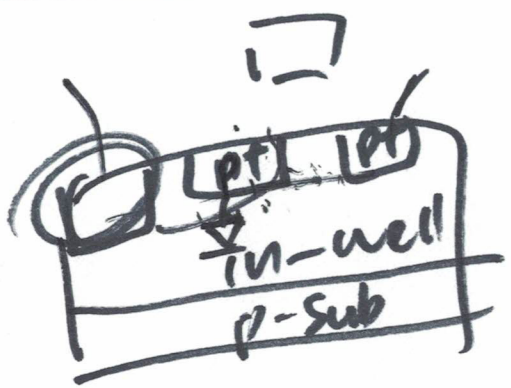
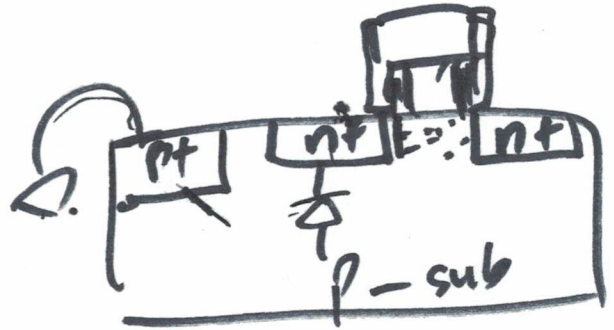

IDS
VDS

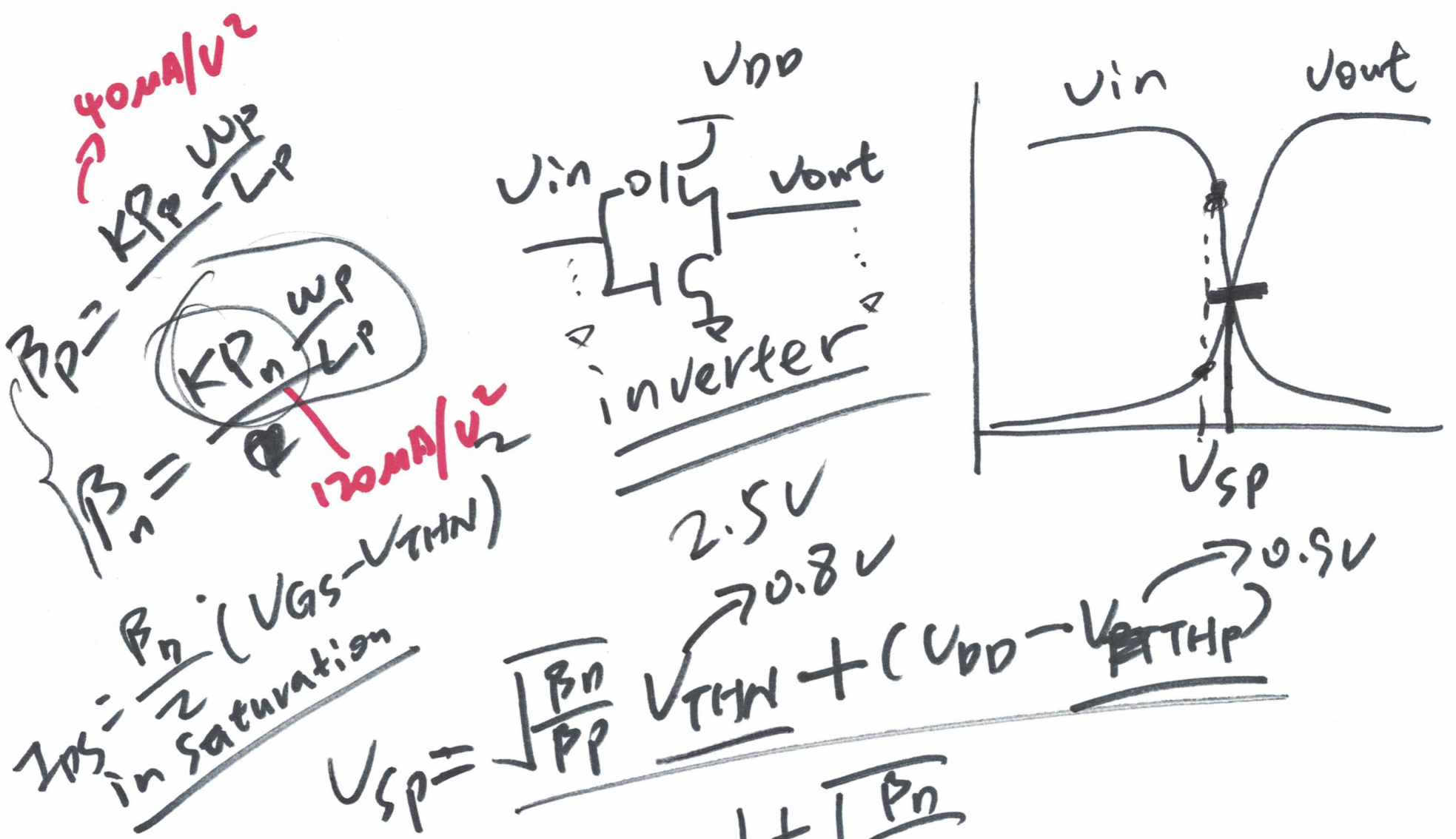





VDS
VGS
n+
n+


p+
p+
in-well
p-sub


p+
n+
n+
p-sub


40mA/V²
$K_P \frac{W_P}{L_P}$
$\beta_P =$
$K_{P_n} \frac{W_P}{L_P}$
$\beta_n =$
120mA/V²
$\frac{\beta_n}{2}(V_{GS}-V_{THN})$
$I_{DS} =$
in saturation
V_{DD}
V_{in}
V_{out}
inverter
2.5V
V_{in}
V_{out}
V_{SP}
$V_{SP} = \frac{\sqrt{\frac{\beta_n}{\beta_P}}\,V_{THN} + (V_{DD} - V_{THP})}{1+\sqrt{\frac{\beta_n}{\beta_P}}}$
0.8V
0.9V
$= 2.5V$

$$\beta_p = \frac{KP_p}{} \frac{W_p}{L_p} = 40\mu A/V^2 \cdot \frac{W_p}{L_p}$$

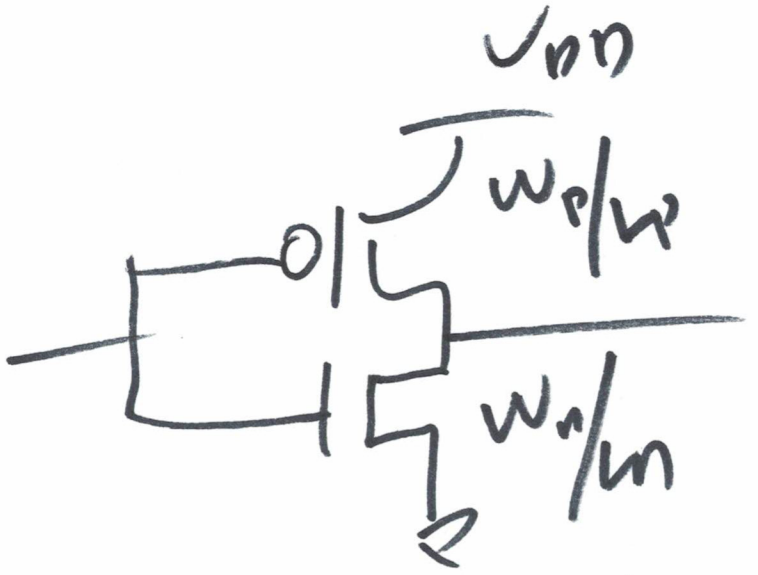
$$= 120\mu A/V^2 \cdot \frac{W_n}{L_n} = KP_n \frac{W_n}{W_n} = \beta_n$$

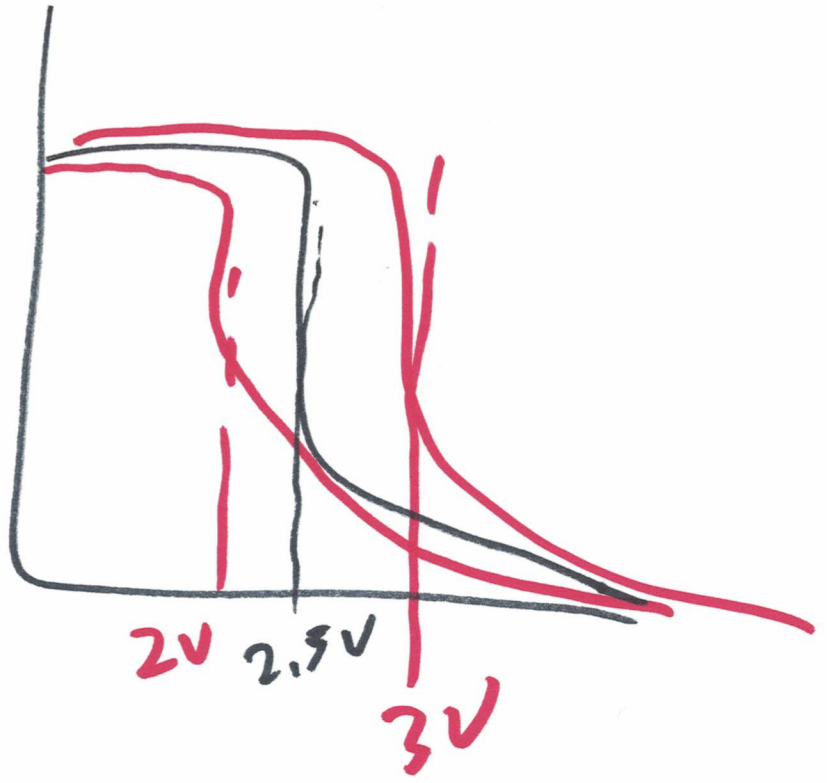
$$3\frac{W_n}{L_n} = \frac{W_p}{L_p}$$

$$L_n = L_p = 2\lambda = 600nm$$

$$\lambda = 300nm$$

$$\leq (500nm)$$


V_{DD}
W_p/L_p
W_n/L_n


2V
2.5V
3V