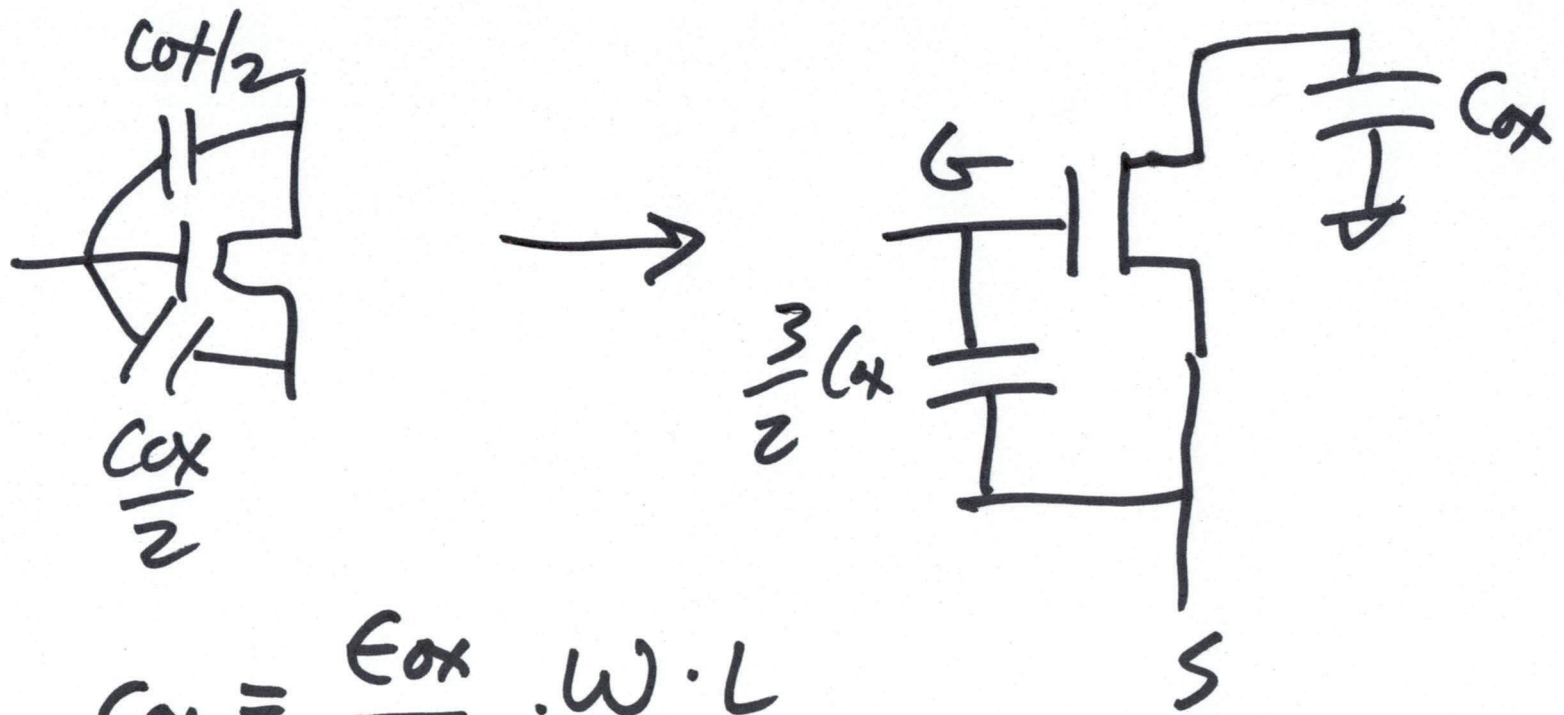


2)

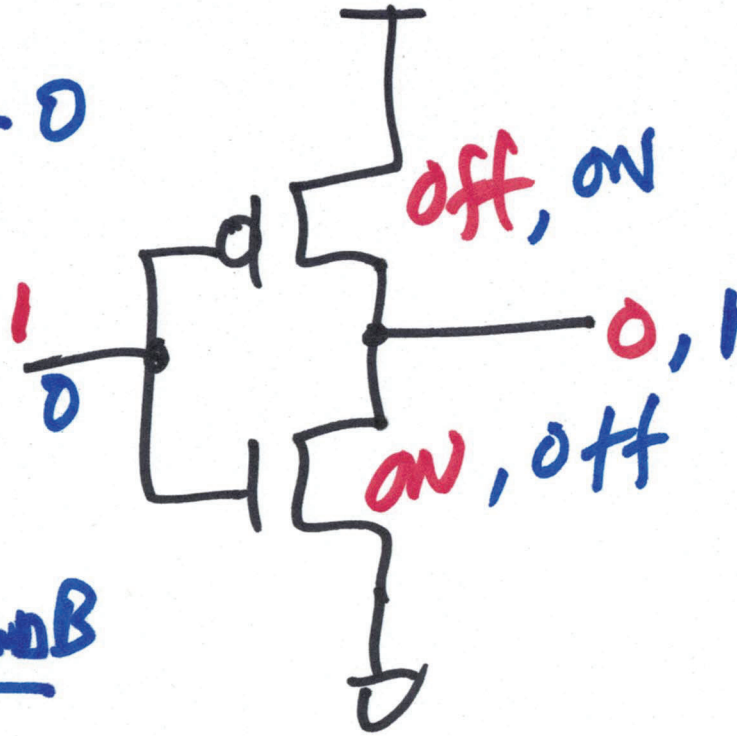
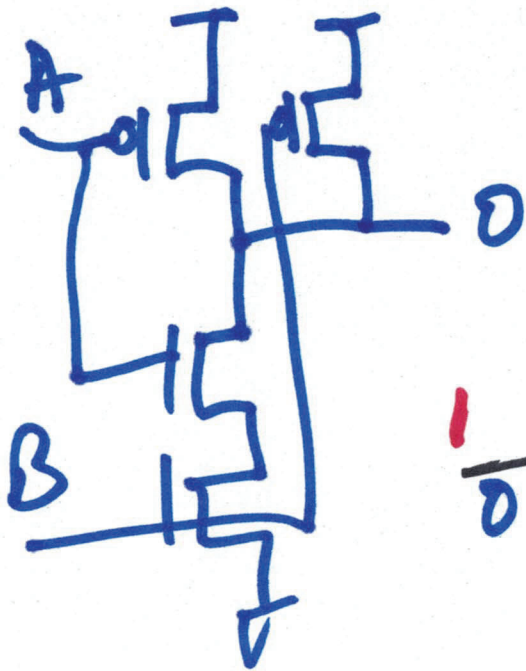


$$C_{ox} = \frac{\epsilon_{ox}}{t_{ox}} \cdot W \cdot L$$

$$C'_{ox} = \frac{2.5 \text{ fF}}{1 \mu\text{m}^2}$$

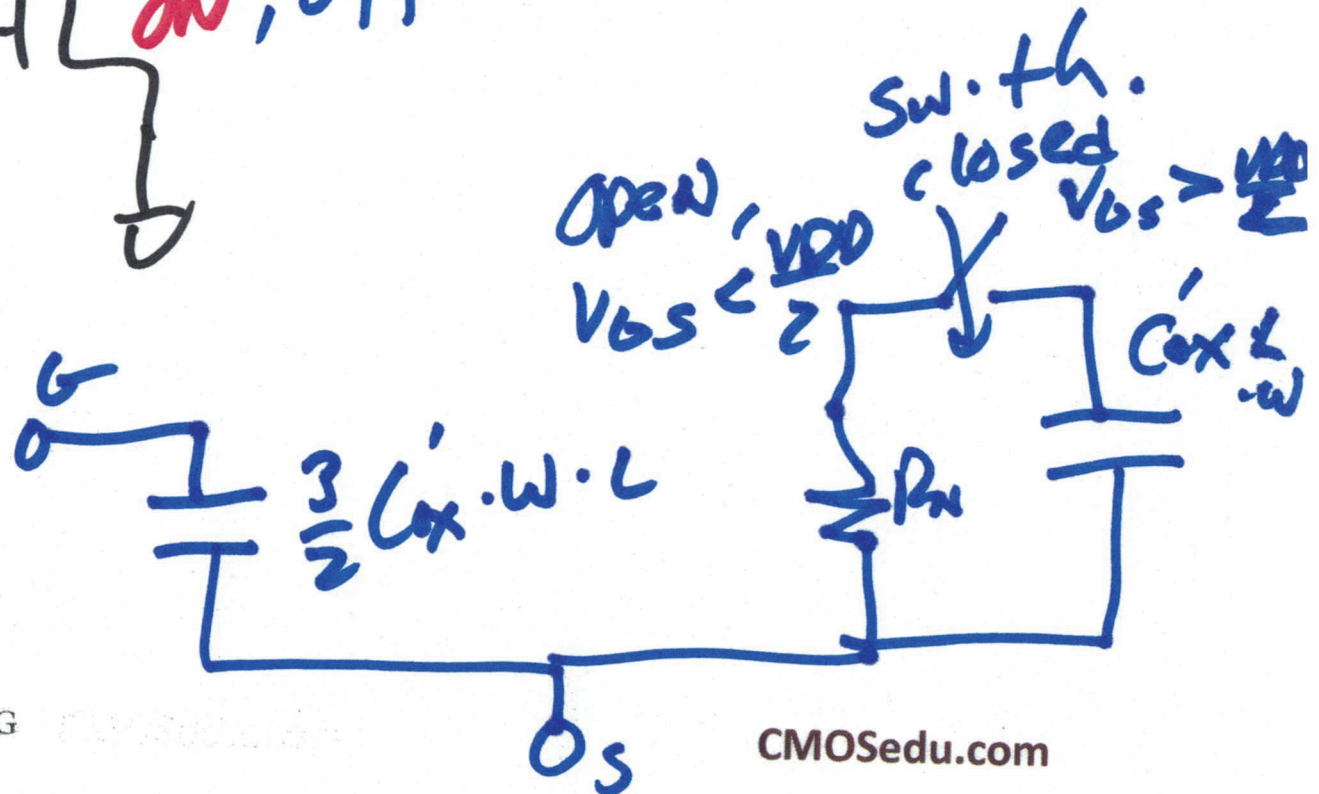
3)

CMOS Inverter

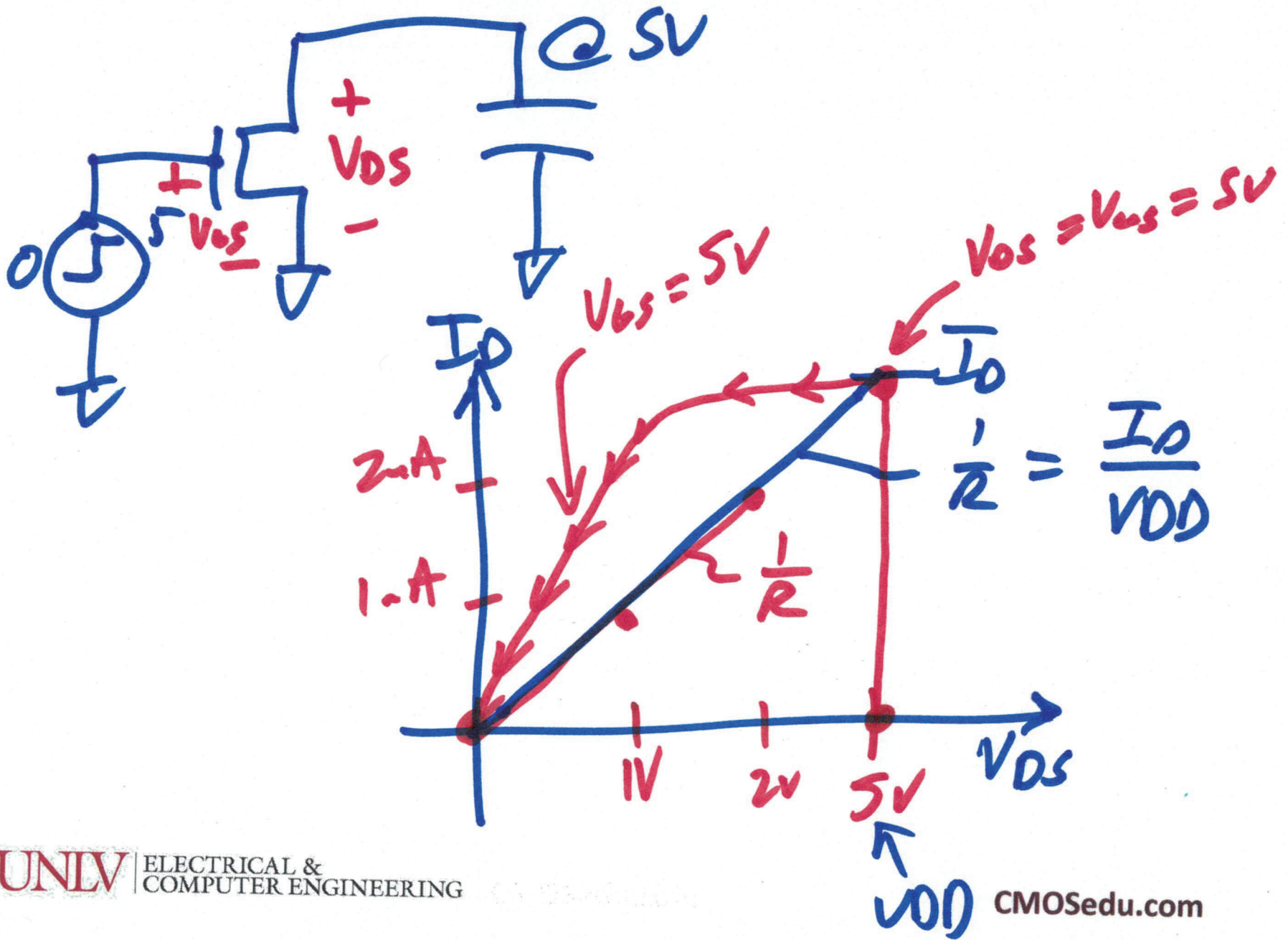


→ Do →

A	B	A AND B
0	0	1
0	1	1
1	0	1
1	1	0



4)



5)

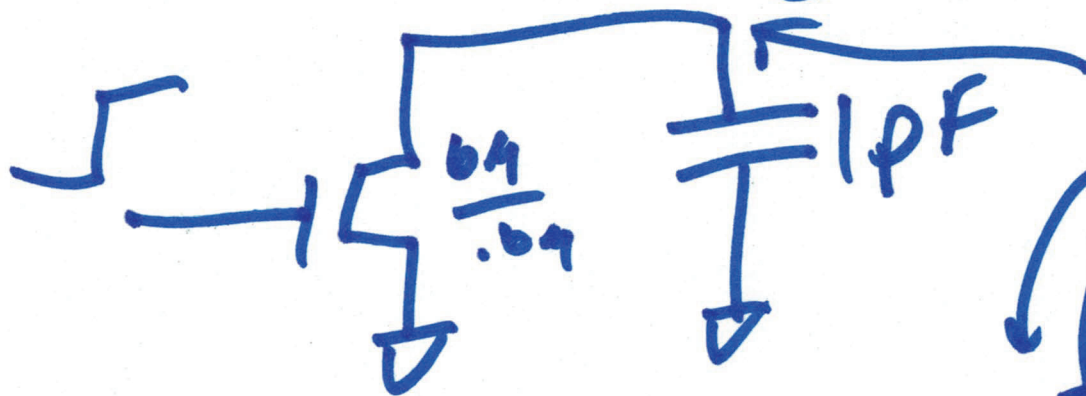
$$R_N = \frac{5V}{2.5 \mu A} = 2k = R_N' \cdot \frac{4}{10}$$

$$L = .6$$

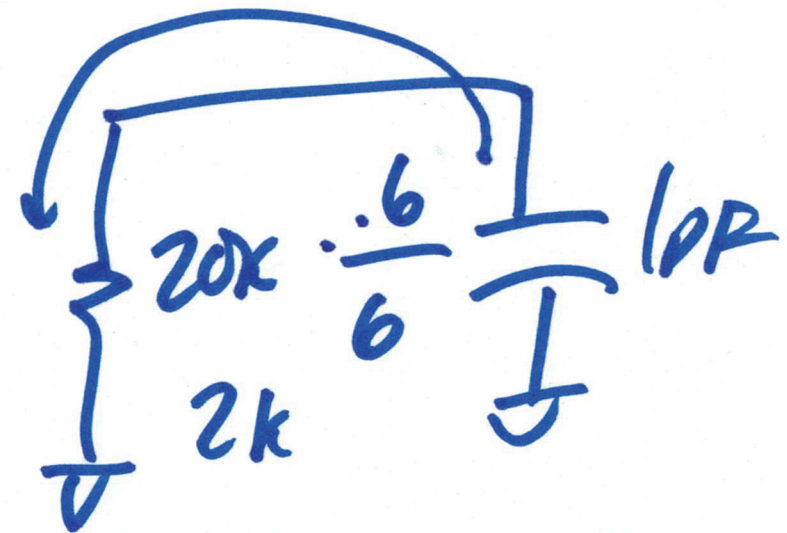
$$W = 6$$

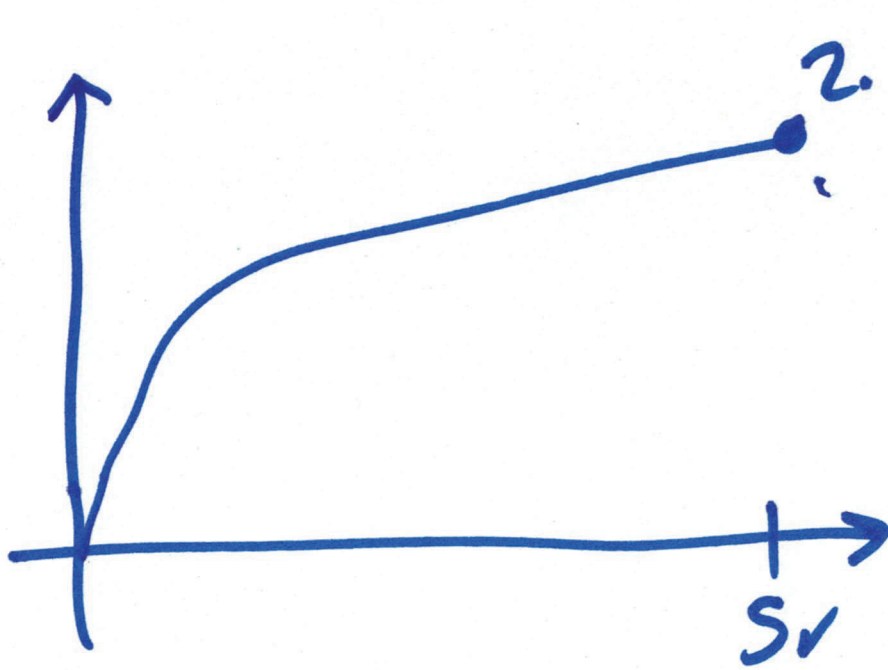
$$R_N' = 20k$$

@ 5V



$$t_d = 0.7RC = \underline{\underline{1.4ns}}$$



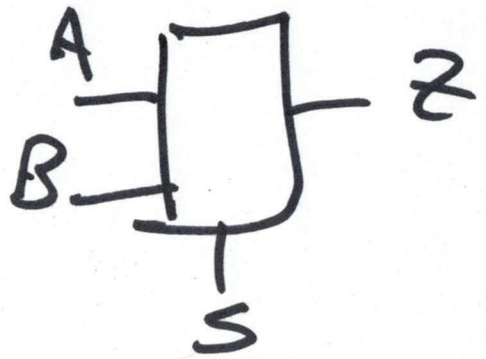
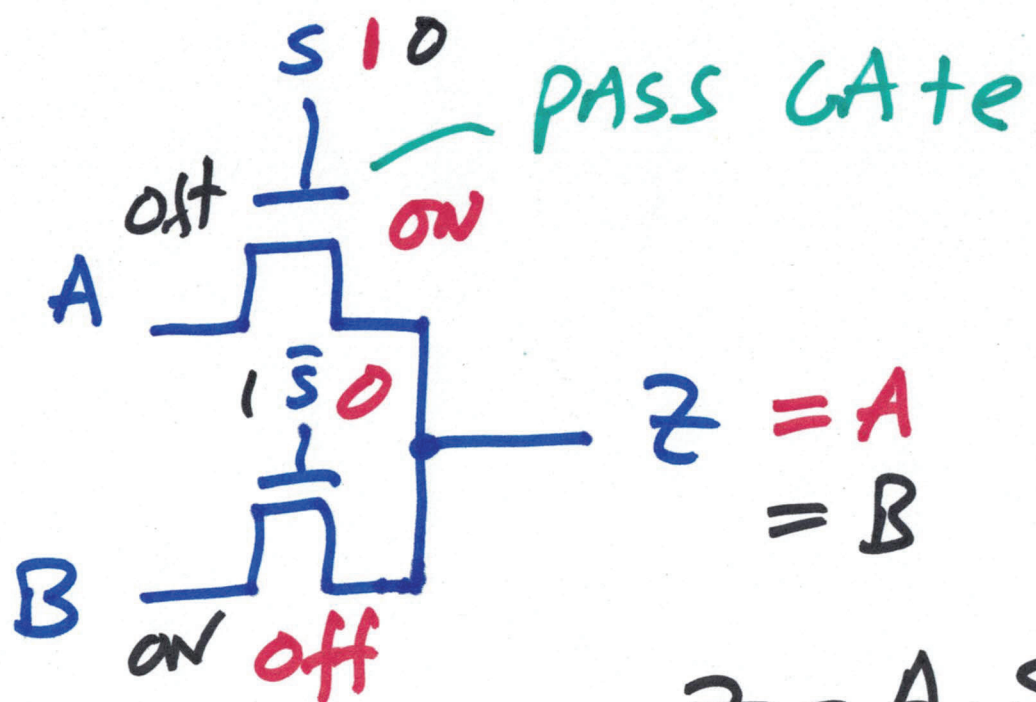


$$I_D = \frac{K_{PN}}{2} \cdot \frac{6}{.6} (V_{DD} - .8)^2$$

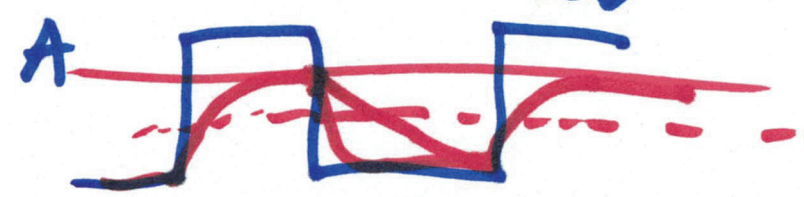
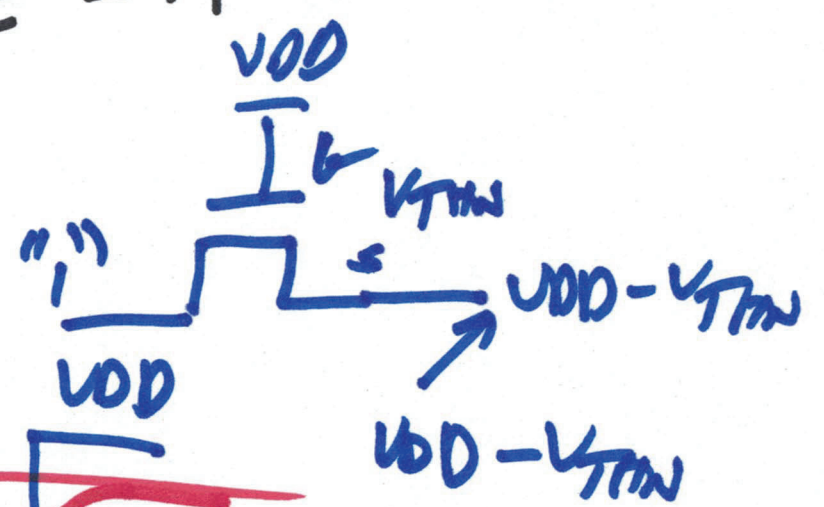
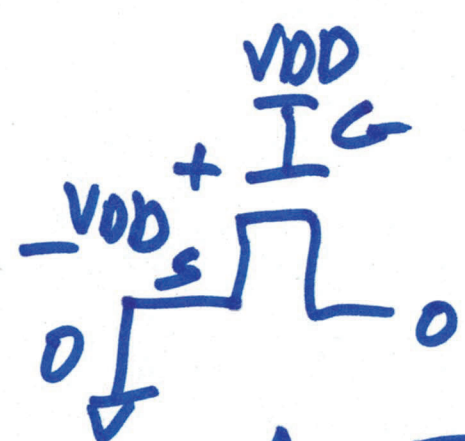
$$\frac{2.5 \text{ nA}}{5 \cdot 17.64} = K_{PN}$$

284

7)



$$Z = A \cdot S + B \cdot \bar{S}$$



8)