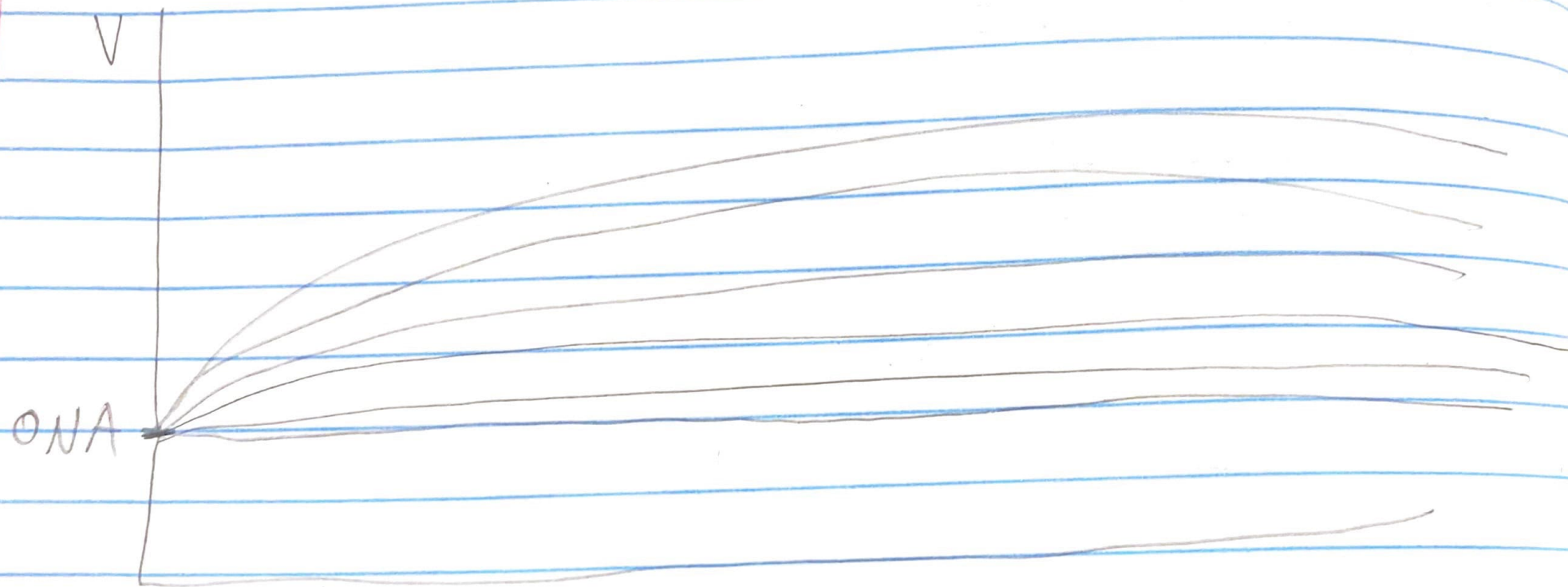
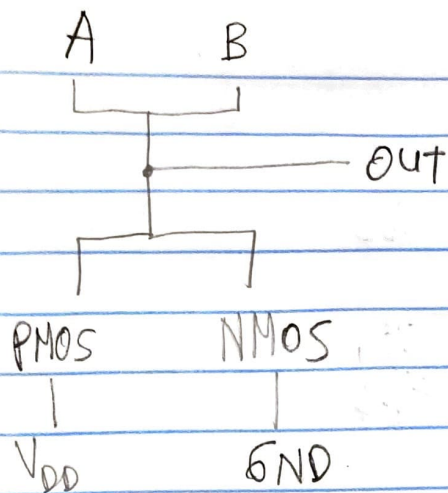


Prelab 6:

Noble Huang (Mulia Wijaya)



a.



b.

Pull-up networks:

→ Consists of PMOS transistor
Connected between output & VDD

→ NOR gate above:

Connected to input signals A & B

Push-down networks:

→ Consists of NMOS transistor
Connected between output & GND

→ NOR gate above:

Connected to inverted version of A & B

c. $A=0$ & $B=1$:

PMOS transistor } A : OFF
Connected to } B : ON

NMOS transistors (at same time):
Connected to inverted versions of A & B } ON

Meaning: output → Connected to GND → $V_{out} = V_{GND} = 0$ V

$A=0$ & $B=0$:

Both PMOS transistors : ON
providing a path to V_{DD}

Both NMOS transistors : OFF
Blocking a path to GND

Meaning:

output \rightarrow Connected to $V_{DD} \rightarrow V_{DD} = V_{out} = 1$