

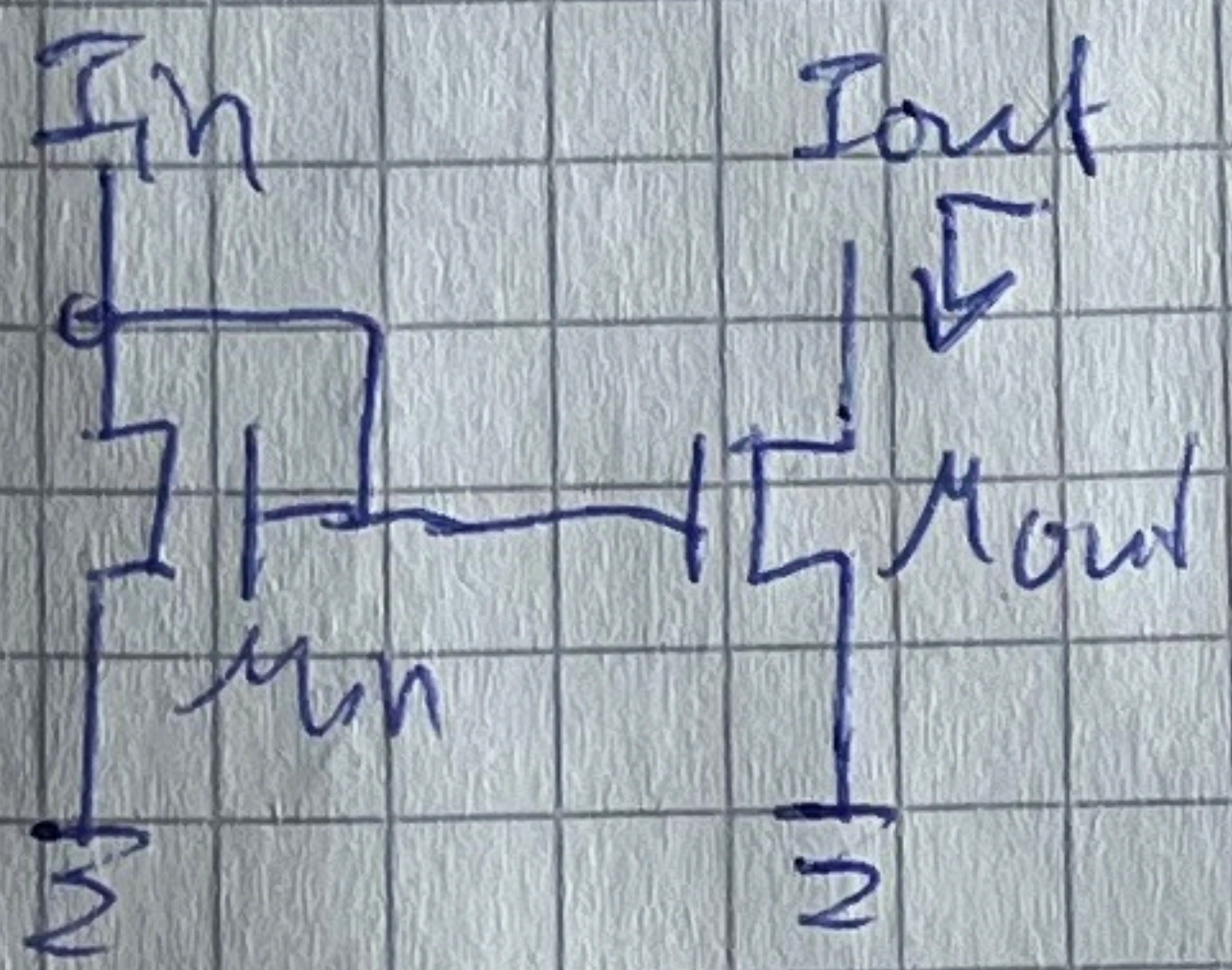
AIC

MOSFET



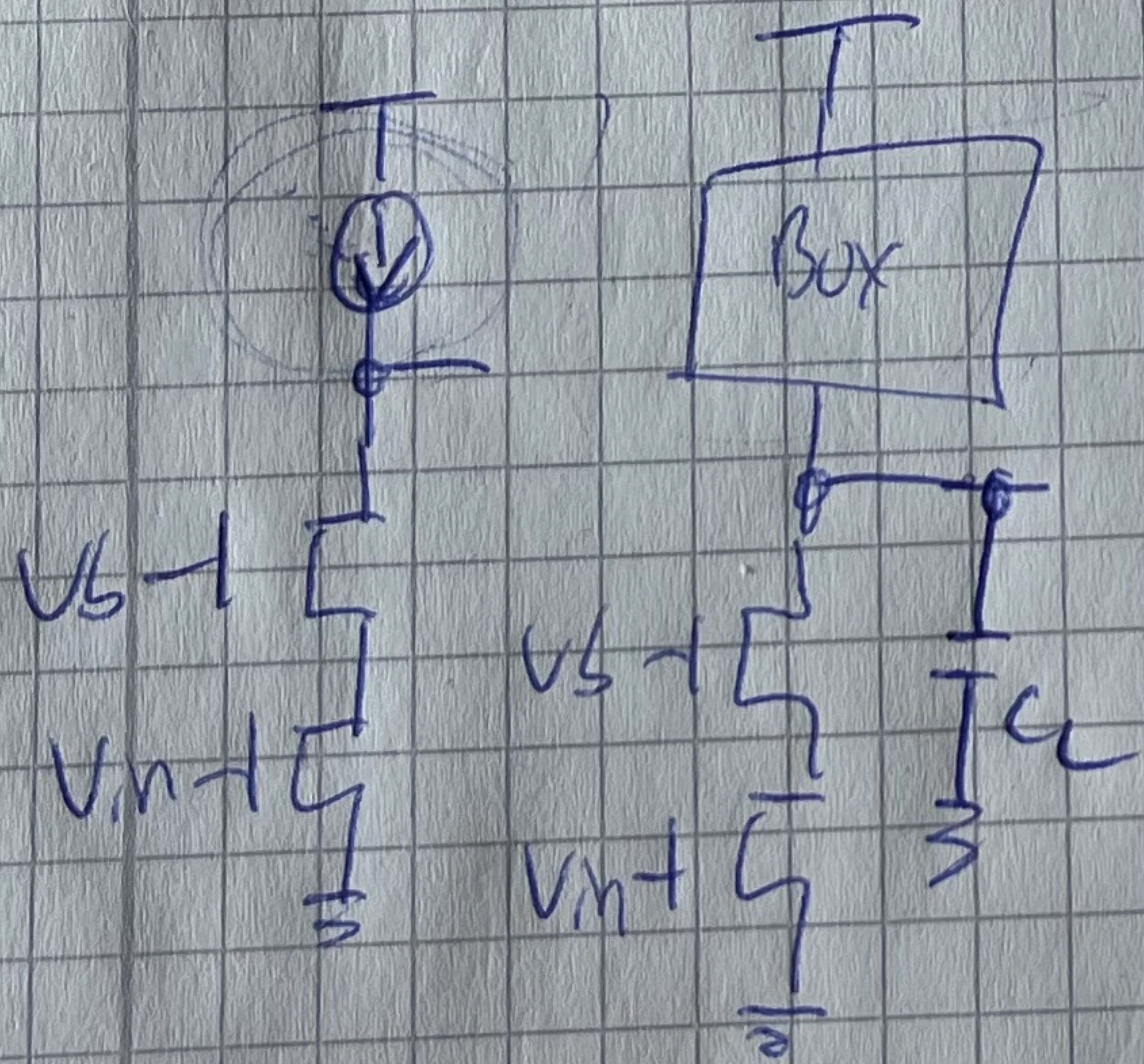
- 1) draw a pmos
- 2) make S, G, D, B
- 3) what is C_{gs} equation: $\frac{\epsilon \cdot W \cdot L}{t_{ox}}$
- 4) where is L, W ?
- 5) is C_{gs}/C_{ds} of w/l dependent?
- 6) ~~is~~ C_{gs}/C_{ds} of voltage dependent?
- 7) what is root cause of C_{gs}/C_{ds} → depletion zone
- 8) what happens if Bulk is connected to GND?

Current mirror



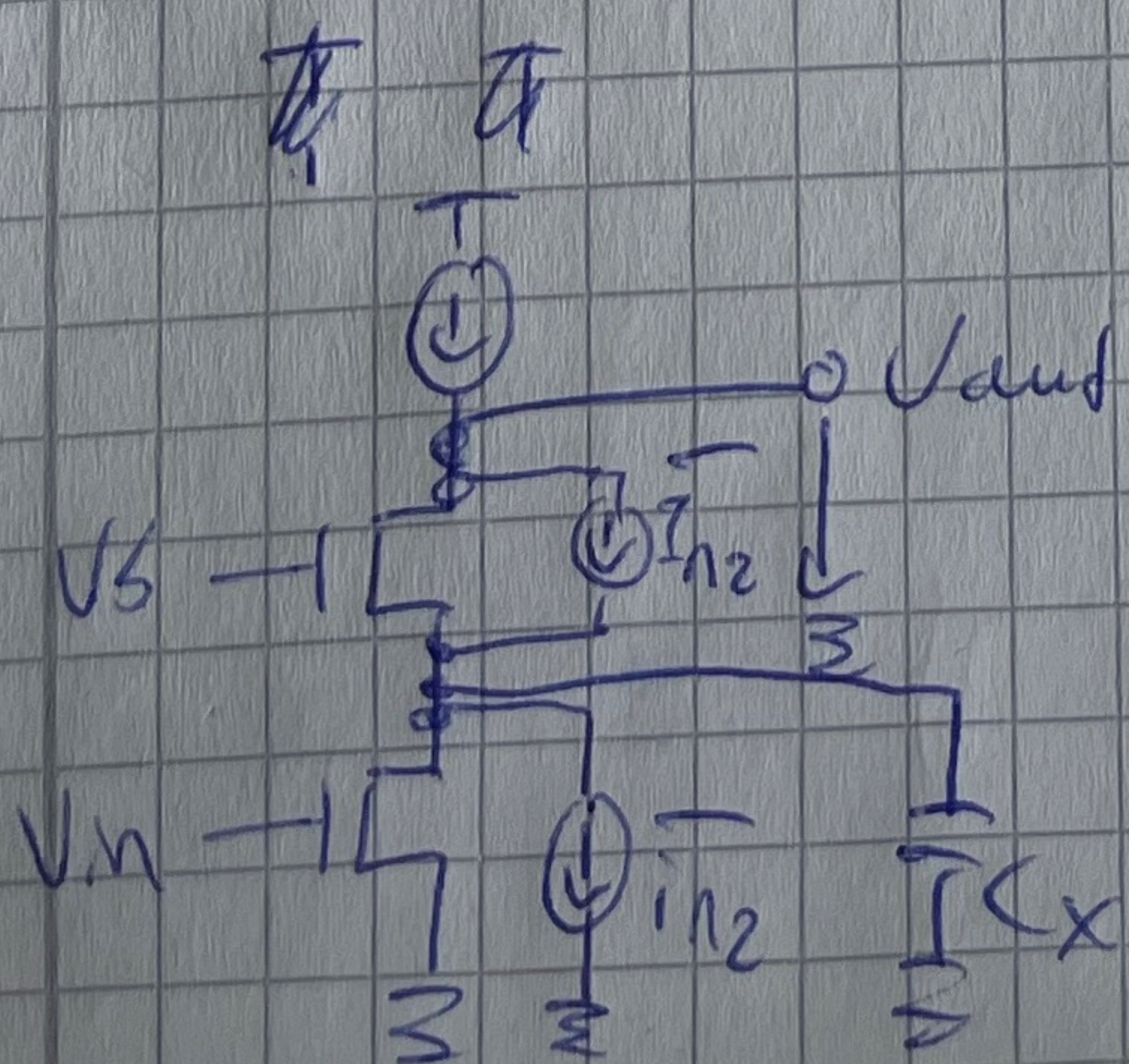
- 1) $I_{out} \frac{W_{out}}{L_{out}} = I_{in} \frac{W_{in}}{L_{in}}$
- 2) v_{ds} dependency? $(1 + \lambda v_{ds})$
- 3) I_{ds}/v_{ds} curve
- 4) how to get big output impedance
↳ $L \uparrow + cascode$

Cascode



- 1) r_{out} ?
- 2) gain?
- 3) what to put into Box
- 4) how will r_{out} change?
- 5) Bode-Plot, w_{zds} , w_{pc}

Noise



- 1) i_{n2}
- 2) $\overline{v_{out, n2}}$, $\overline{v_{in, n2}}$
- 3) $(x \rightarrow \text{low } f$
 $\rightarrow \text{high } f$