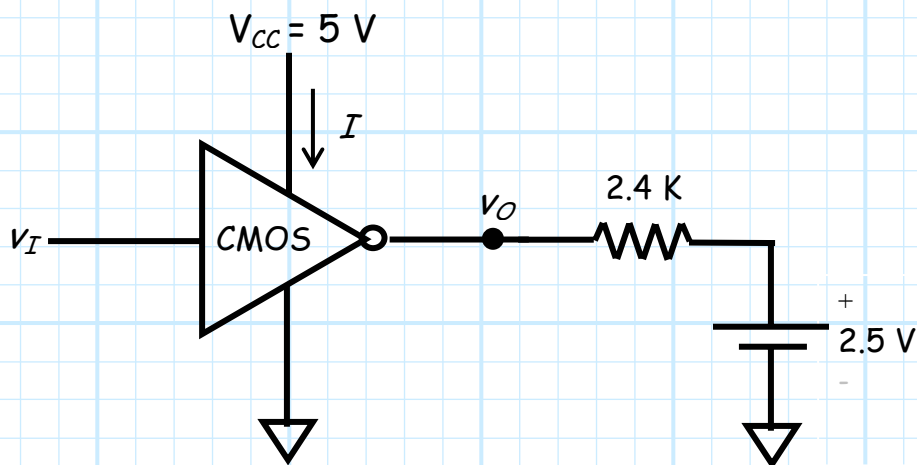


Special Problem 4.10-2

Consider the **CMOS inverter** below.

The inverter is made with a complementary pair of MOSFETs, with $K=1.25 \text{ mA/V}^2$ and $V_T = 1.0 \text{ V}$.



- 1) Find the **approximate** value of v_O (using any valid simplifying approximation) if $v_I = 0.0 \text{ V}$.
- 2) Find the **approximate** value of v_O (using any valid simplifying approximation) if $v_I = 5.0 \text{ V}$.
- 3) Find current I if $v_I = 2.5 \text{ V}$ and the output of the inverter is **open-circuited** (i.e., the resistor and voltage source are **disconnected** from the output).