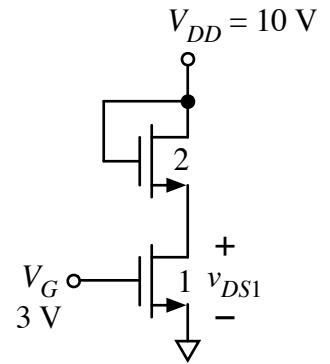


- a. In the circuit at right, the two NMOSs are identical: $\mu_n C_{ox} = 100 \mu A/V^2$, $W/L = 5 \mu m / 0.5 \mu m$, and $V_{Tn} = 1 V$. Find v_{DS1} for the lower transistor.

$v_{DS1} =$ _____

Choose a new width for the upper transistor so that v_{DS1} for lower transistor will be 3 V. All other parameters and circuit values remain unchanged.

$W_2 =$ _____



- b. In the circuit at right, the NMOS has $\mu_n C_{ox} = 100 \mu A/V^2$, $W_n/L_n = 5 \mu m / 0.5 \mu m$, and $V_{Tn} = 1 V$, and the PMOS has $\mu_p C_{ox} = 50 \mu A/V^2$, $W_p/L_p = 10 \mu m / 0.5 \mu m$, and $V_{Tp} = -1 V$. Find v_{DSn} for the NMOS.

NMOS: $v_{DSn} =$ _____

Choose a new width for the PMOS so that v_{DSn} for NMOS will be 3 V. All other parameters and circuit values remain unchanged.

$W_p =$ _____

