

Open book and closed notes.

Show your work for credit and place a box around each of your answers.

For the 1 μm book process used below: $V_{THN} = 800 \text{ mV}$, $V_{THP} = 900 \text{ mV}$, $KP_n = 120 \text{ } \mu\text{A}/\text{V}^2$, and $KP_p = 40 \text{ } \mu\text{A}/\text{V}^2$.

1. Show how to calculate the currents in M1 and M4 (hint: they will be a factor of 4 different because of the PMOS current mirror device sizes). (5 points)

