

EE-320 Exercise 3

1. Derive the expression for $g_m \cdot r_O$ (in saturation) in terms of I_D , W and L . Plot $g_m \cdot r_O$ as a function of I_D with L as a parameter. Note that $\lambda \propto 1/L$.
2. Find the expression(s) that relate V_{out} to V_{in} as V_{in} varies from 0 to $V_{DD} = 3V$. Assume that $|V_{TH}| = 0.8V$ and $\lambda = \gamma = 0$.

