

UNIVERSITY OF CALIFORNIA AT BERKELEY  
College of Engineering  
Department of Electrical Engineering and Computer Sciences

EE105 Lab Experiments

## Report 9: MOS Characterization and Amplifiers

Name:

Lab Section:

3.1.2 Attach your printout.

3.1.3 Approximately what criterion determines the boundary between saturation and triode?

3.1.4 Properties (Part 1)

$g_m =$

$r_o =$

Region of Operation:

3.1.5 Properties (Part 2)

$g_m =$

$r_o =$

Region of Operation:

3.2.1 Channel Length Modulation Factor

$\lambda =$

3.2.3 Attach plot of  $(I_D)^{\frac{1}{2}}$  vs.  $V_G$ .

3.2.4 Find  $K_n$ .

$K_n =$

3.2.5 Find  $V_{TH}$ .

$V_T =$

3.3.2 Identify the two amplifier stages.

3.2.3 Find the DC bias of  $V_{IN}$  for maximum gain. Find the gain and output swing at this bias point. What problems might we encounter with biasing exactly at the point of maximum gain?

$V_{IN} =$

$A_v =$

Output Voltage Swing:

3.3.4 What problems might we run into if the resistor were too big or too small?