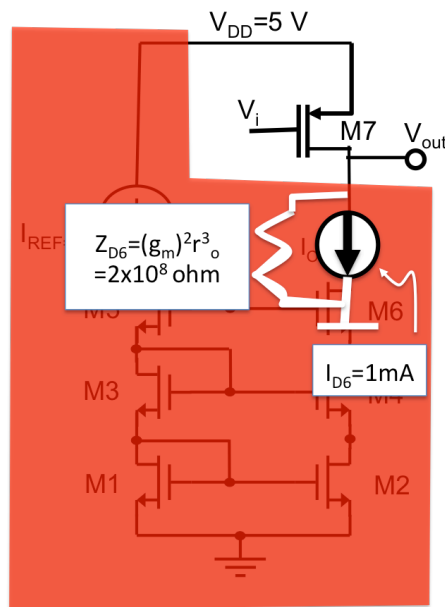


c) Draw a simplified version of above circuit by replacing the highlighted circuitry with a voltage source and a resistor.



2) Let us assume M1-9 are identical and similar to the MOSFET in question 1. Also all MOSFET operates in saturation region. Assume  $V_{B1-5}$  are dc voltages. Also use the following terminology. The drain current, transconductance, Output resistance of MOSFET ( $M_i$ ) are  $I_{di}$ ,  $g_{mi}$  and  $r_{oi}$  respectively.

a) Draw the ac signal pathway ( a line connect input to output through transistors ). Then express the number of single stages **(4)** in this voltage amplifier? Close to each stage write if the amplifier is Common Drain, Common Source or Common Gate.

