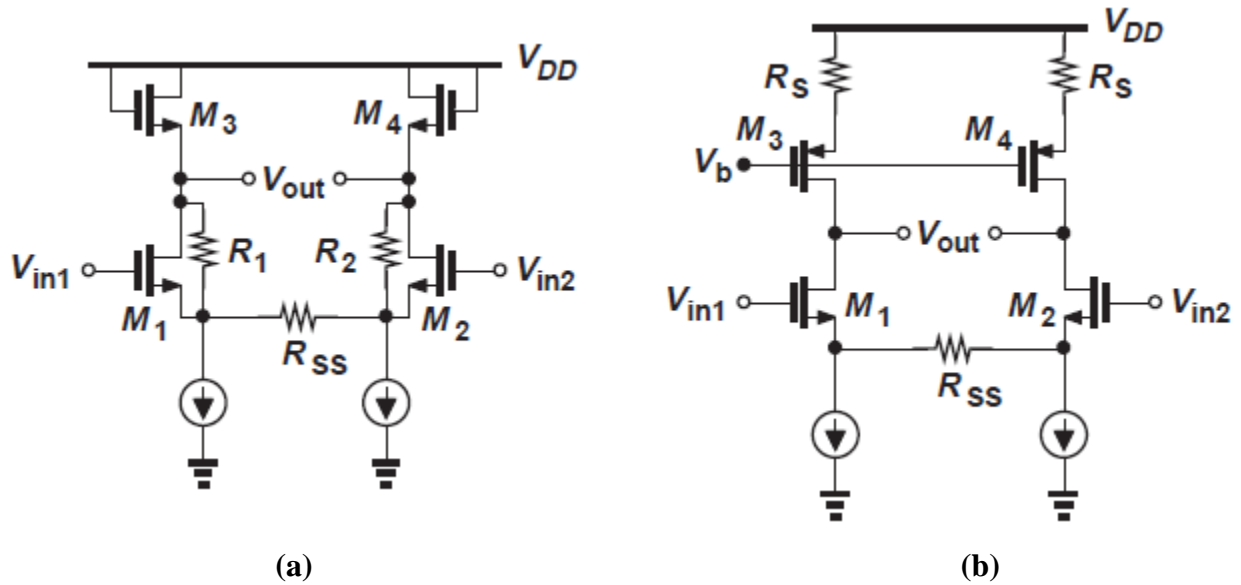


**EHB 262E: ELECTRONICS II****Homework 3****Due date: May 23, 2021 23.59****Fig. 1: Differential Amplifiers**

For the differential amplifiers above,  $V_{in1} = +V_{id}/2$  and  $V_{in2} = -V_{id}/2$ . The circuits are perfectly symmetrical and  $\lambda > 0$  (i.e. do not ignore  $r_o$ ). Find the differential voltage gains of the circuits. Indicate + and – signs for the  $V_{out}$  so that the gain is positive. (Hint: You can use the differential half circuit method and  $-G_m R_{out}$  method which were demonstrated during problem solving session.)