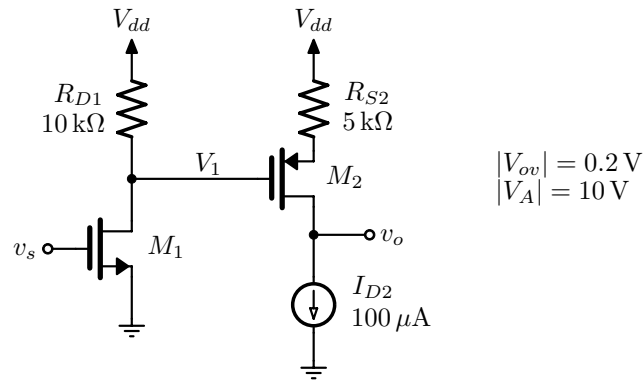


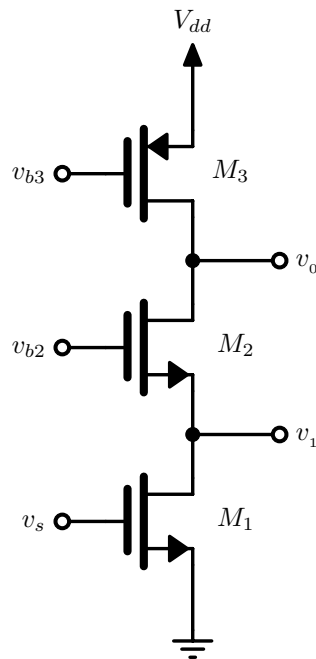
## Problem Set 2

**Q1.** For the figure shown below, all transistors (including the current source which is assumed to be made of a single transistor) has  $|V_{ov}| = 0.2\text{ V}$  and  $|V_A| = 10\text{ V}$ . Assume  $I_{D1} = 100\ \mu\text{A}$ .



- Find  $v_1/v_s$ ,  $v_o/v_1$  and  $v_o/v_s$ .
- Find  $R_{out}$ .

**Q2.** For the figure shown below, all transistors (including the current source which is assumed to be made of a single transistor) has  $|V_{ov}| = 0.2\text{ V}$  and  $|V_A| = 10\text{ V}$ . Assume  $I_{D1} = 100\ \mu\text{A}$ .



- Find  $v_1/v_s$ ,  $v_o/v_1$  and  $v_o/v_s$ .
- Find  $R_{out}$ .