

# Fall 2004; E6316: Analog Systems in VLSI; HW1

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due on 14 Sep. 2004

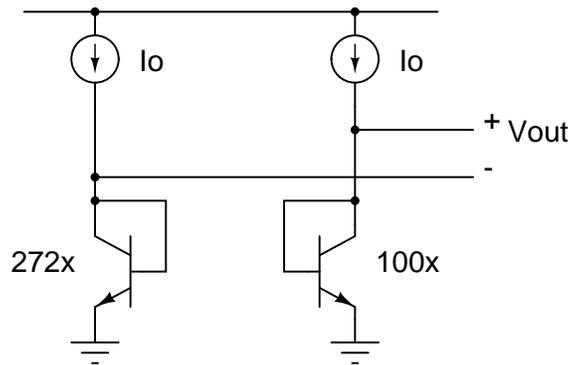


Figure 1:

1. Compute  $V_o$  in Fig. 1. Assume that the transistors are in active region at room temperature.

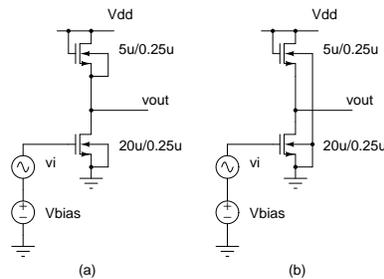


Figure 2:

2. Compute the small signal gain  $v_o/v_i$  in Fig. 2(a). What happens to the gain when the body of the top transistor is grounded as shown in Fig. 2(b).
3. Sketch the output waveform in Fig. 3. The opamp has a unity gain frequency of 3 MHz and a very large dc gain.
4. Textbook problems 11.1, 11.2, 11.7, 11.8, 11.10, 11.12

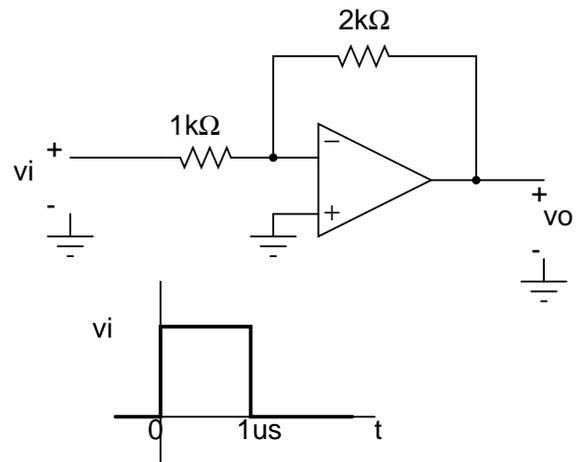


Figure 3: