

EE6320 RF Integrated Circuits Homework 2

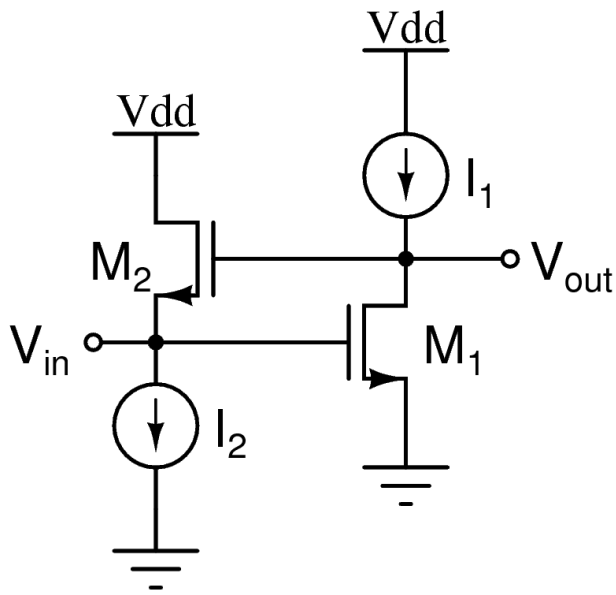


Figure 1

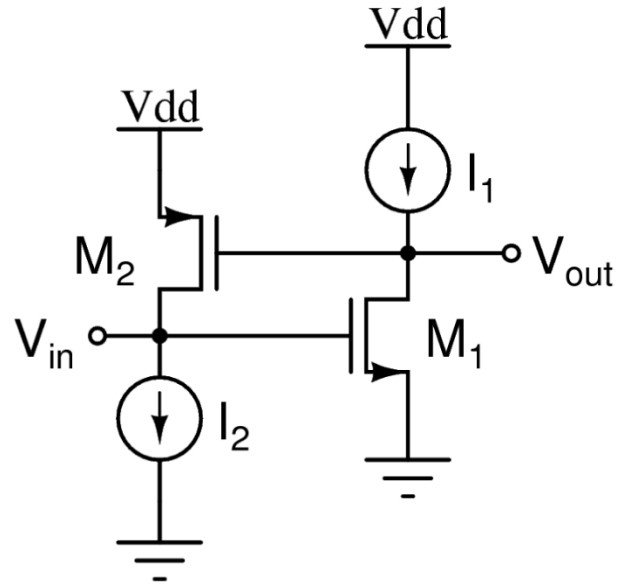


Figure 2

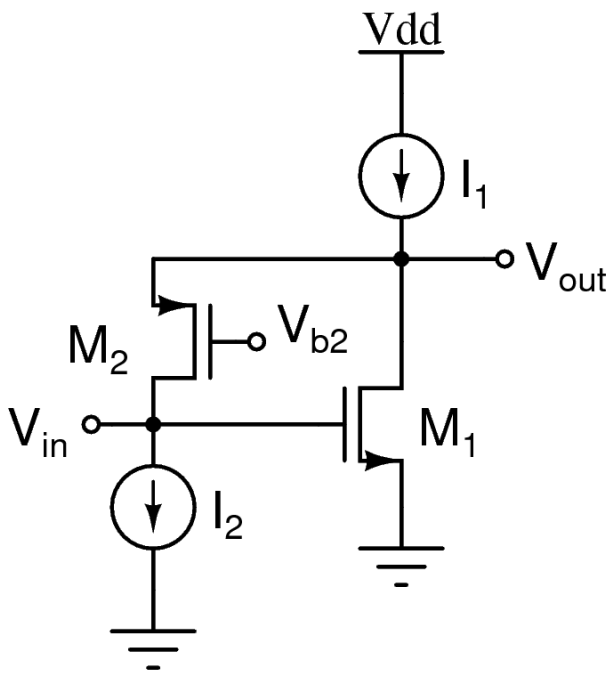


Figure 3

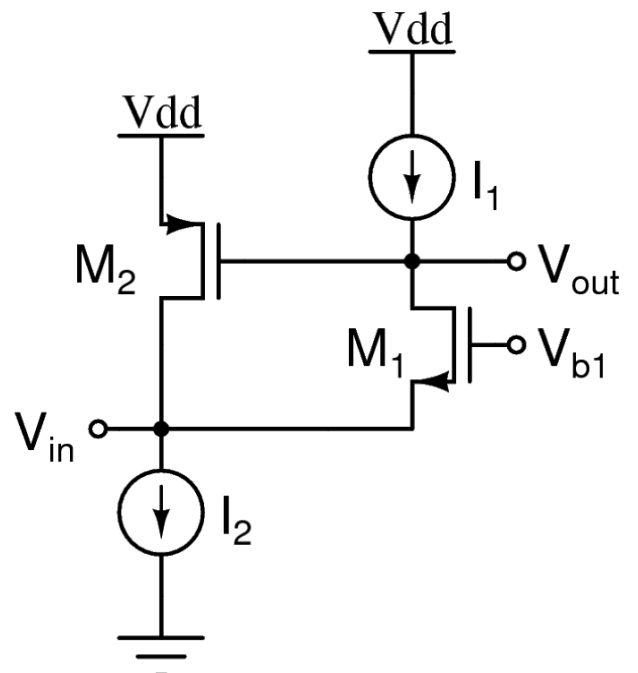


Figure 4

1. Determine the noise figure of the circuit shown in Figure 1 above with respect to a source resistance  $R_s$ . Neglect channel length modulation and body effect.

2. Determine the noise figure of the circuit shown in Figure 2 above with respect to a source resistance  $R_S$ . Neglect channel length modulation and body effect.
3. Determine the noise figure of the circuit shown in Figure 3 above with respect to a source resistance  $R_S$ . Neglect channel length modulation and body effect.
4. Determine the noise figure of the circuit shown in Figure 4 above with respect to a source resistance  $R_S$ . Neglect channel length modulation and body effect.
5. A circuit exhibits a noise figure of 3 dB. What percentage of the output noise power is due to the source resistance  $R_S$ ?
6. A circuit exhibits a noise figure of 1 dB. What percentage of the output noise power is due to the source resistance  $R_S$ ?