Problem 1
Design a two-stage op-amp that meets the following requirements. Use only a compensation capacitor (not a compensation resistor) to do the compensation.

\[ V_{dd} = 5V, \ V_{ss} = -5V, \ C_{load} = 20pF, \ \text{slew rate} > 2V/\mu \text{sec}, \ \text{input CMR} = -3V \text{ to } +3V, \ A_{vd} > 4000, \]

\[ GB = 1MHz, \ \text{and the output voltage swings within 1.0V of either rail.} \ \text{Assume that} \ \kappa_n = 17\mu A/V^2, \]

\[ \kappa_p = 8\mu A/V^2, \ V_{tn} = 0.7V, \ V_{tp} = -0.9V, \ \lambda_n = 0.01 \text{ and } \lambda_p = 0.02. \]