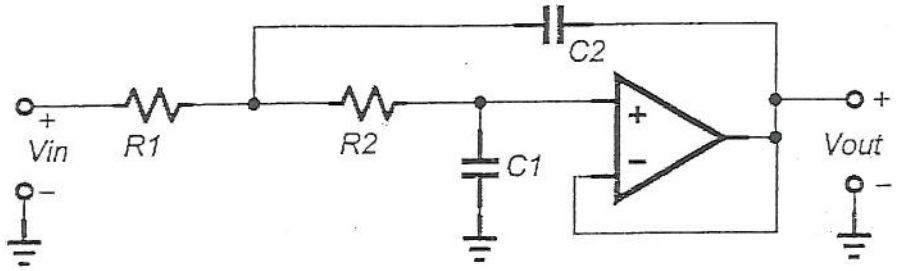
FINAL EXAMINATION

ECE 580

Dec.8, 2011

Open Book

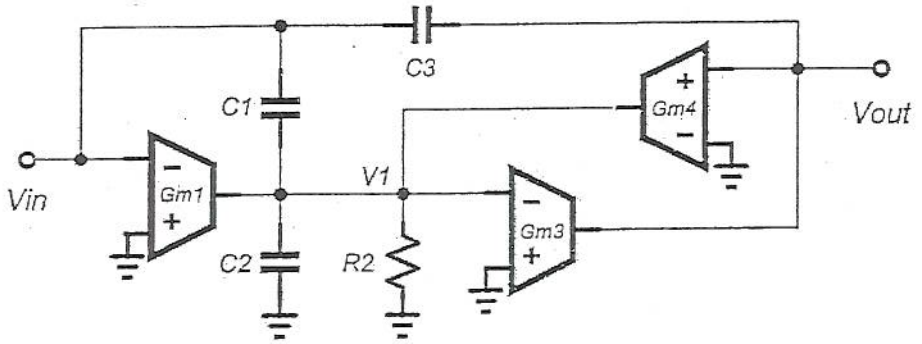
1. In the Sallen-Key filter shown, $R_1 = 25$ kohms and $C_2 = 50$ pF. Choose R_2 to maximize the pole Q, and C_1 to achieve $Q_{max} = 4$.



2. For the G_m-C filter shown, find

   a. the condition for zeros located on the imaginary axis in the s plane;

   b. the pole frequency and pole Q.



3. Find all transfer functions V_{out}/I_k, $k = 1, 2, 3, 4$ for the circuit shown. All impedances are equal to Z.

(*Hint:* use interreciprocity, and analyze the adjoint network from the left!)