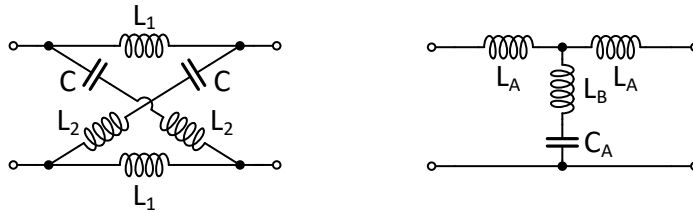


ECE 580

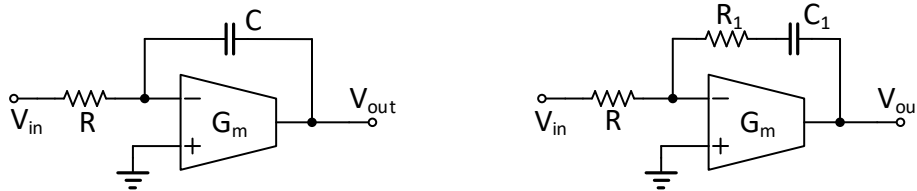
FINAL EXAMINATION

December 7, 2022, 2-4 pm

- The two-ports shown have the same impedance parameters.
  - What are the element values of the bridged-T in terms of those of the lattices?
  - Is the bridged-T always realizable? What is the condition for it?



- Find the transfer function  $V_{out}/V_{in}$  of the first  $G_m$ -C stage shown.
  - Find the element values of the second stage to make  $V_{out}/V_{in} = -1/sRC$ .



- Find the transfer functions  $I_o/I_i$ ,  $i = 1, 2, 3, 4$  in the circuit shown.  
Hint: use inter-reciprocity.

