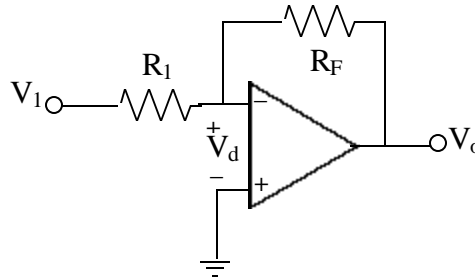


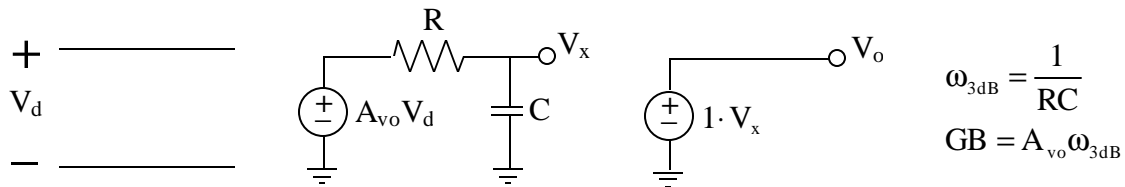
Homework Assignment #1

Problem 1. a) Design an inverting amplifier with a closed loop DC gain of -10 and a bandwidth of 1MHz . Determine the value of the resistors and required GB of the Op Amp.



b) What will be the bandwidth for the inverter designed in a) if you simply substitute the op amp by a 741 type?

Problem 2. Simulate in HSPICE (or PSPICE) your designed circuit of Prob. 1. Use an Op Amp macromodel as shown below:



Do AC analysis and also an impulse response. Discuss your results. Find a commercial Op Amp capable to satisfy the design specs. Simulate again your circuit with the macromodel of the commercial Op Amp. Indicate the differences between both results of simulations.

Problem 3. Search an application for filters in the literature i.e., Trade magazines, EDN, Hands on Electronics, Popular Electronics, Radio Electronics, Electronics, etc. Write a brief description of the application and the exact reference.