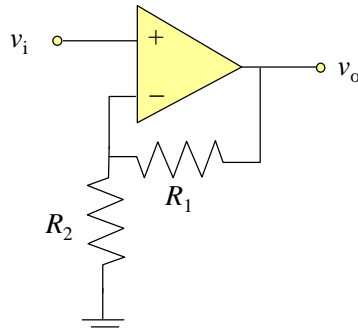
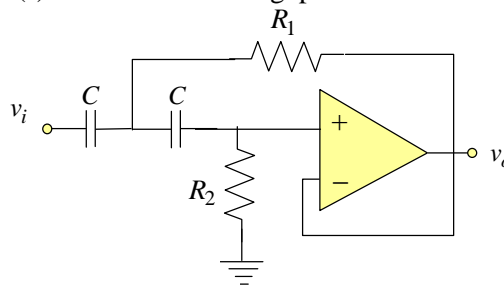


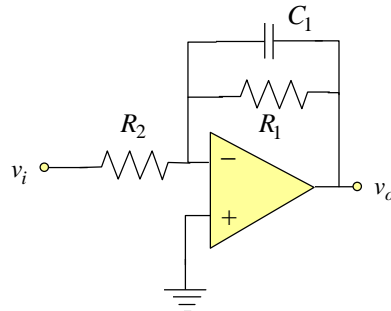
1. The non-inverting amplifier uses type I feedback. Find a formula for the input and output impedance for the non-inverting amplifier in terms of R_1 and R_2 :



2. Derive the transfer function $H(s)$ for the 2nd-order highpass filter in terms of the component values:



3. Show that the first-order lowpass filter is a Butterworth filter:



4. Assume that R_f and R_g have nominal values of 10 $\text{K}\Omega$, and R_1 and R_2 have nominal values of 1 $\text{K}\Omega$. Assume the tolerance on these resistors is 5%, find the worst-case CMRR for the differential amplifier.

