

PSet 9:

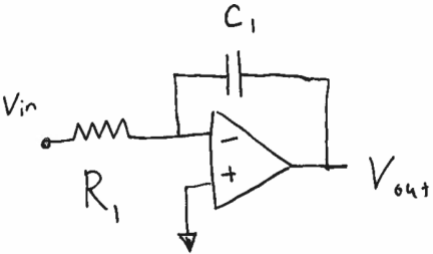
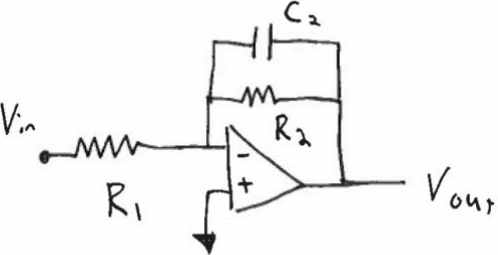
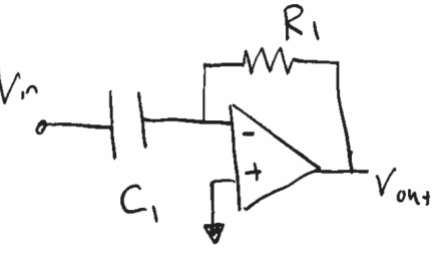
Analysis of active filters with complex impedance

For each of the circuits in the table, figure out the complex number that represents the ratio of the output voltage divided by the input voltage. Write your final result in the tables. For each circuit in the table, create a plot of the magnitude of this complex number as a function of frequency. Put both the magnitude and frequency on a logscale. For each circuit use:

- $R_1 = 1 \text{ k}\Omega$ $C_1 = 1 \text{ }\mu\text{F}$
- $R_2 = 10 \text{ k}\Omega$ $C_2 = 0.1 \text{ }\mu\text{F}$

Remember, the impedance of a resistor and capacitor are

- $Z_R = R$
- $Z_C = \frac{1}{j\omega C}$

Class 18: Filters and complex numbers

