1) Determine the transfer function of each of the circuits below; Then find a circuit that does not contain any op amps and has the same transfer function times a constant.

2) Use the more realistic model of an op amp given in the text on page 193 and find the exact transfer function of the noninverting amplifier and the differentiator; show that these approach the results found in class for the ideal op amp when the gain and output resistance are large and the input resistance is small.

3) Find the transfer function of each of the circuits below; assume ideal op amps. Then use Matlab to verify your results.
4) Let the input to an RC low-pass filter be the signal $x(t)$ of (1) of Homework #2; discuss the behavior of the circuit output as the time constant $RC$ varies. Let the input to an RC high-pass filter be the signal $x(t)$ of (1) of Homework #2; discuss the behavior of the circuit output as the time constant $RC$ varies.