H.W. #6 EE 221 Spring 2020

Show your work for credit and put a box around each of your answers (follow the hw guidelines!)

1. Find the output voltage in the following op-amp circuit using AC analysis. Hand sketch Vin and Vout on the same plot and compare to an LTspice. Note that this circuit is an integrator and so the initial DC voltages may (will) have a DC offset in Vout that you'll have to remove, or subtract out, in the simulation results. (4 points)
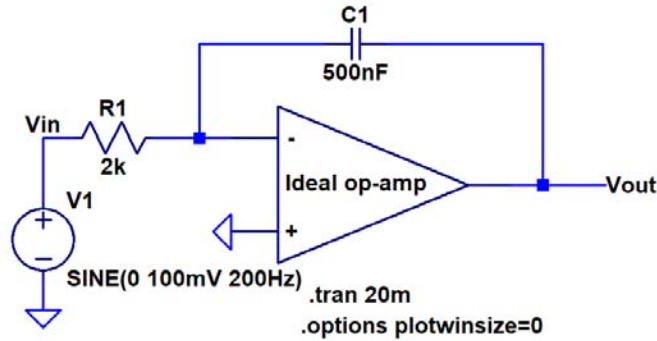
2. Find the output voltage for each of the following circuits using AC analysis (as always make sure your hand calculations are concise and clear). Sketch the output voltage and input voltage on the same plot in the time domain and compare to LTspice. Again, as in question 1, you may have to remove the DC signal in the output to properly compare your AC hand calculations to simulation results. (8 points)
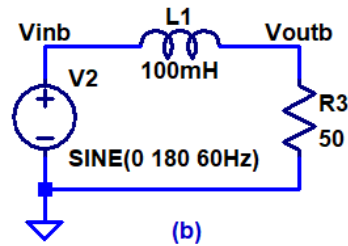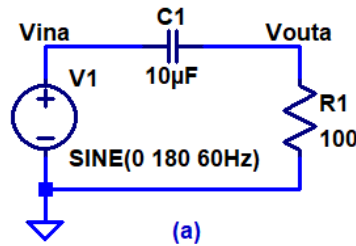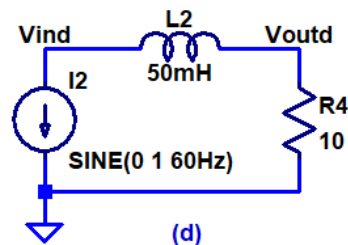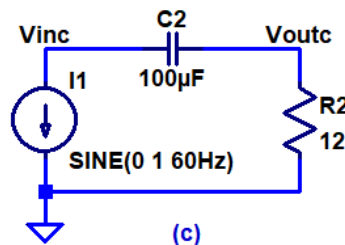
3. Re-draw the schematics in problem 2 with the input sources labeled as phasors and representing the capacitors and inductors using complex numbers (see Fig. P7.62 on page 452 of the book for example). (2 points)