EE322 Fall 2012 Homework Problem Set 29 (PS29)

Be sure to show your work.

1. Text, Problem 12-6b, d. Determine the equation for the frequency response $H(f)$, and ensure that there are no $1/j\omega C$ terms in the numerator or denominator of $H(f)$. Hint: leave your equations in terms of R, L and C until the very last step, then plug in these values. Plot the frequency responses in MATLAB for each problem in a 2x1 subplot (magnitude on top, phase in radians on the bottom). Hint: the 3rd set of plots given in the answers is for part (b), so let ω=-1500:1500 in your plot, and the 2nd set of plots in the answer is for part (d), so let ω=-50000:50000.

2. Text, Problem 12-29a. Write your answer so that there are no $1/j\omega C$ terms in the numerator or denominator of the input impedance $Z(j\omega)$ or the frequency response $H(j\omega)$. Using MATLAB, plot the magnitude and phase of $Z(j\omega)$ and $H(j\omega)$ for the circuit in 2x1 subplots but put the frequency axis in f (Hz) instead of ω (radians/sec). Recall that $\omega=2\pi f$. Properly label the axes, and use a grid. Let your plots show frequencies from -800 to +800 Hz.