EECS/CSE 70A Network Analysis I

Homework #6

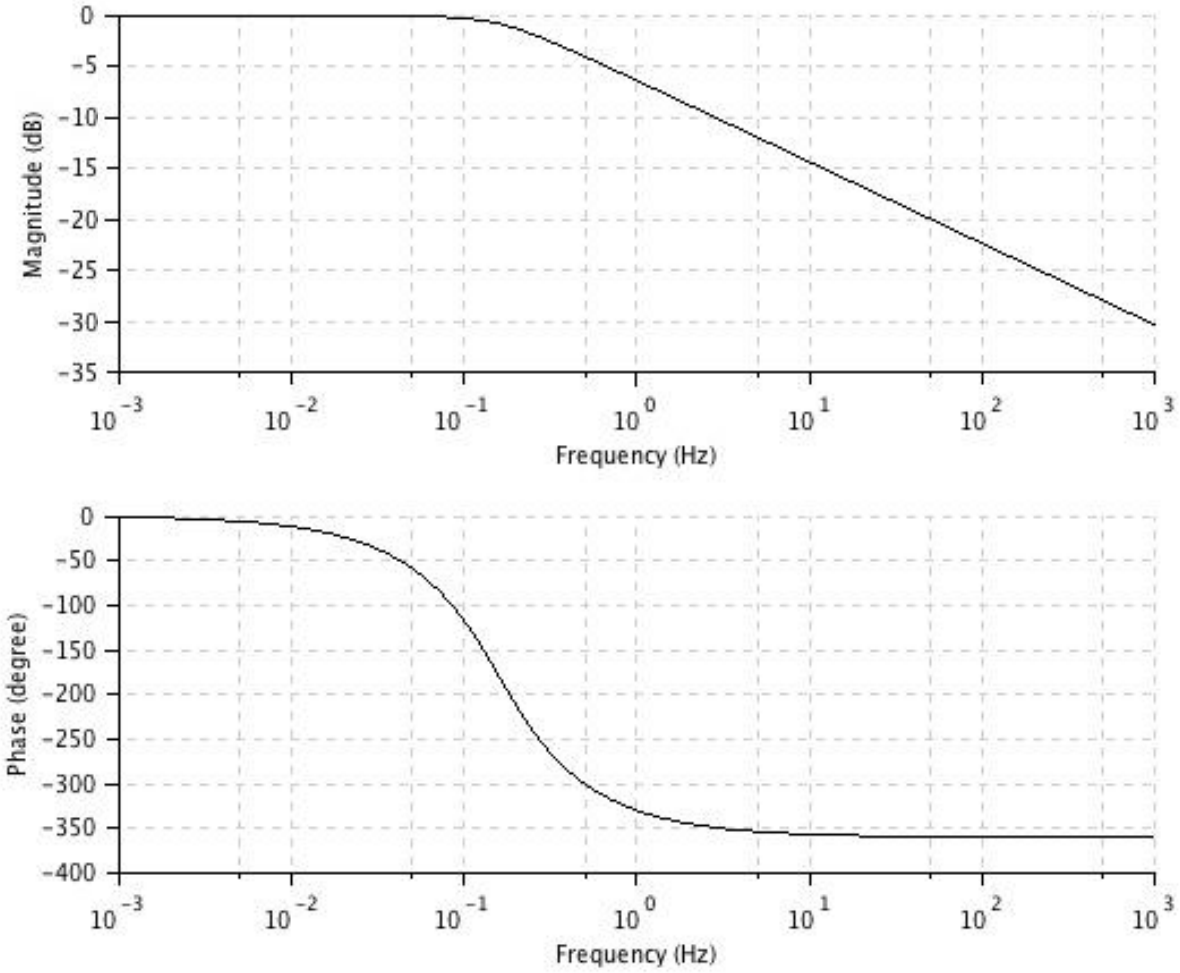
Due on or before

6/3/2016, Friday 3.30pm at EH1111

(You can turn in homework assignments during any of the discussion sessions and office hours before the deadline)

Problem 1 (30pts.)

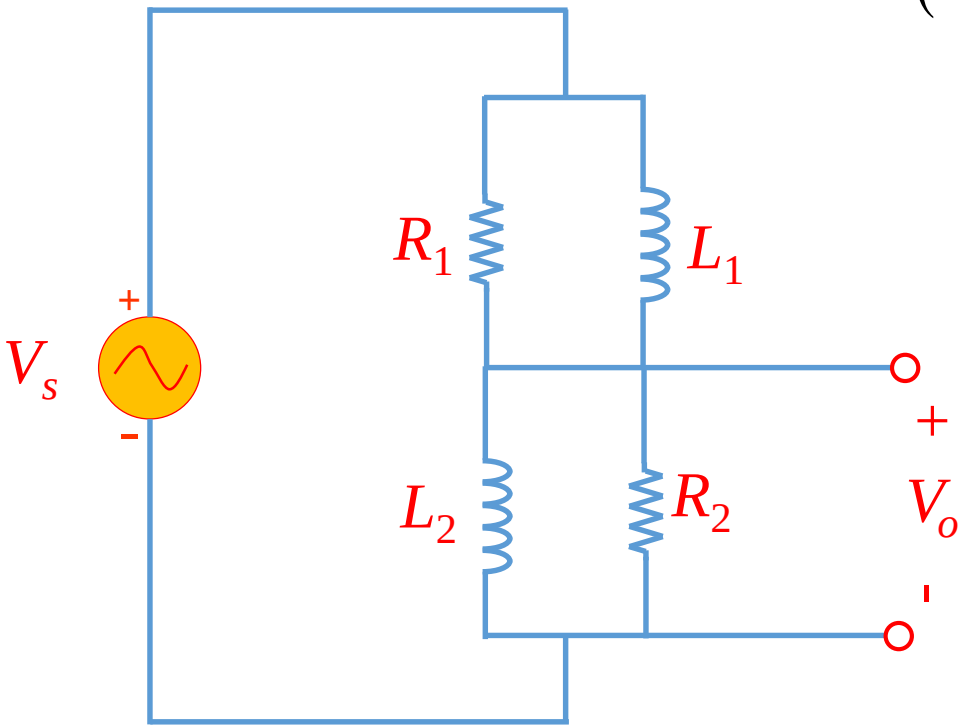
The Bode plots show the magnitude and phase of the transfer function of a circuit. The input voltage $v_{\text{in}}(t) = 1\ \text{mV}\ \cos([2\pi \cdot 10\text{Hz}]t)$. Find the output voltage $v_{\text{out}}(t)$.



Problem 2 (35pts.)

Find the transfer function $H(\omega)$ in terms of R_1, R_2, L_1 and L_2. And simplify $|H(\omega)|$ at $\omega = 0$ and as $\omega \rightarrow \infty$.

$$H(\omega) = \frac{V_o}{V_s}$$



Problem 3 (35pts.)

Find the transfer function $H(\omega)$ in terms of R_1, R_2, C_1 and C_2. And simplify $|H(\omega)|$ at $\omega = 0$ and as $\omega \to \infty$.

$$H(\omega) = \frac{V_o}{V_s}$$