ECE 3355 – ELECTRONICS

HOMEWORK #4

1. For the circuits below, plot the straight-line approximation to the Bode Plots (magnitude and phase). Note that the transfer functions for these circuits were determined in HW #3. Use semi-log graph paper.

a) 

b) 

c) 

2. Recall the circuit you analyzed in Homework 1, which is shown below.



For this circuit, the input current source was specified to be



where 0 = 100[rad/s]. The solution you should have obtained for the output voltage is



a) Find the transfer function **Vo**/**Is** for this circuit. Express your answer with units of []. Draw the magnitude Bode plot for this transfer function. Locate the breakpoint and indicate the three frequencies o, 3o, and 5o on the log() axis.

b) The three sinusoidal current components in the signal do not have the same magnitude, and so it is not surprising that the output voltage components also do not have the same magnitude. However, the magnitude Bode plot suggests that the lower frequencies are attenuated (reduced) more than the higher frequencies. Is this the case? How can you tell?