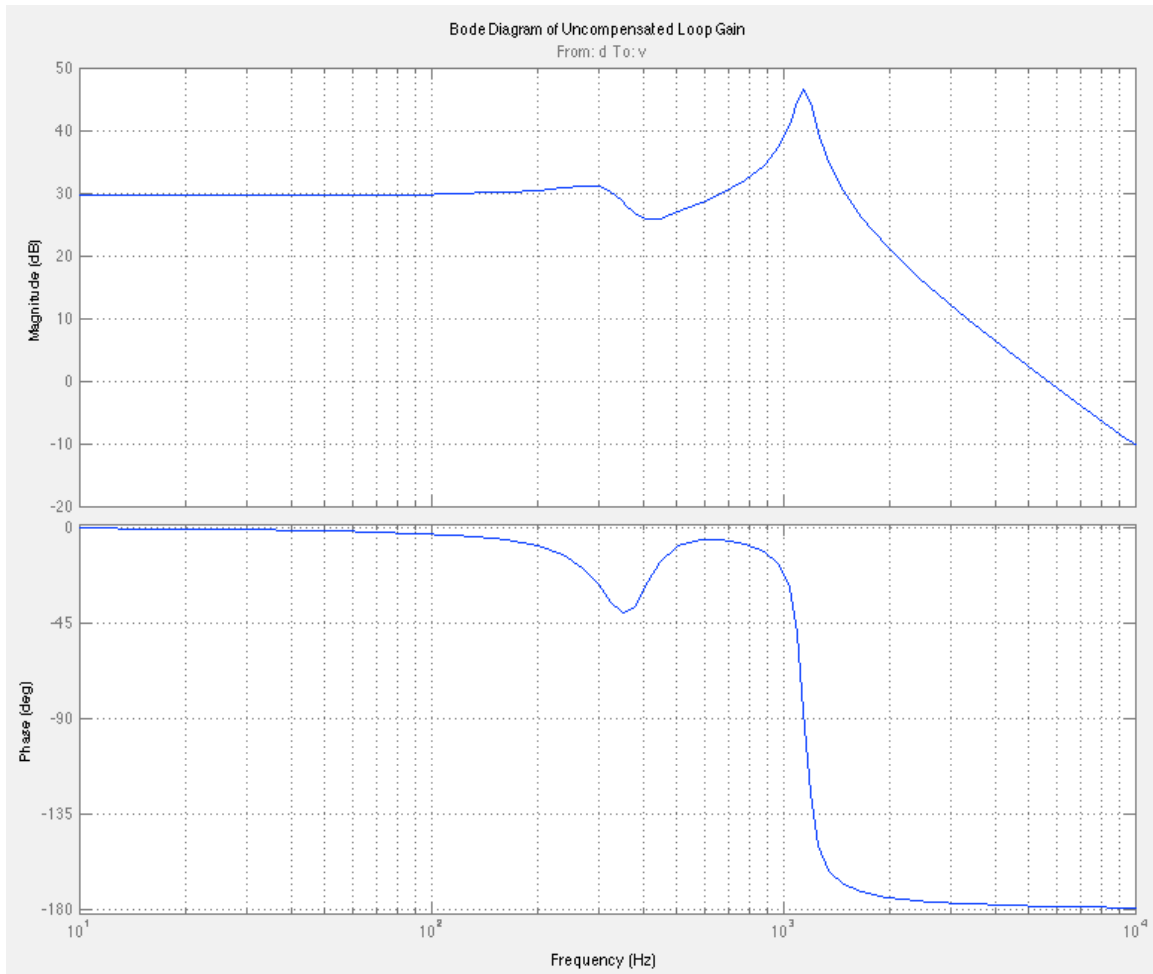


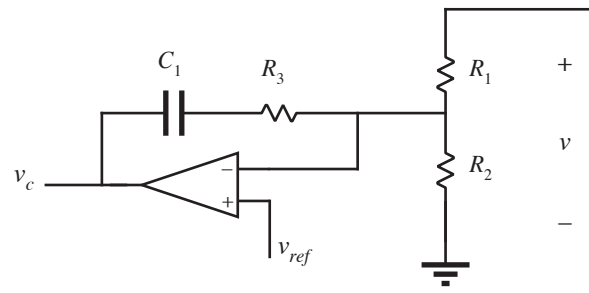
**Sample Quiz Problems**  
ECEN 4517/5517  
Experiment 4 Feedback Problems  
Spring 2012



1. The plots above illustrate the measured uncompensated loop gain of a certain switching regulator circuit. It is desired to obtain a crossover frequency of 3 kHz, with a phase margin of 60 degrees. What should the compensator magnitude and phase be at 3 kHz?

Name \_\_\_\_\_

2. The circuit illustrated below is a PI compensator.



$R_2 = 10 \text{ k}\Omega$ . Select the component values such that the transfer function  $G_c(s) = v_c(s)/v(s)$  has a high-frequency magnitude asymptote of  $(-20 \text{ dB})$  and a corner (zero) frequency of  $1 \text{ kHz}$ . What is the phase of  $G_c$  at  $1 \text{ kHz}$ ?