

Department of Mechanical Engineering
2.14 Analysis and Design of feedback Control Systems

Fall Term 2003

Problem Set 7

Assigned: Oct. 22, 2003

Due: Oct. 29, 2003

Reading: Nise, Chapter 10

Problem 1: Nise, Ch. 10, Problem 1 (p. 674 4th Ed., p. 669 3rd Ed.)

Problem 2: Use Matlab to make Bode plots of each of the systems in Problem 1.

Problem 3: On each of the magnitude plots you made in Problem 2, draw the straight line asymptotic plots, identifying the corner frequencies, and labeling the slope of each section.

Problem 4: Nise, Ch. 10, Problem 6 (p. 674 4th Ed., p. 669 3rd Ed.)

Problem 5: The Bode plots on the next page represent a second order system. Estimate the differential equation governing the system's dynamics. (Note: The low frequency gain is 54 dB.)

Bode plots for Problem 5:

