EEL 301 Homework #8

Issued: 17.04.2013

Question 1. See *Ogata, part of Example 7-27 (Pg. 505)*. For $G(s) = \frac{1}{s(s+1)(0.5s+1)}$ in a unity-feedback system, design a lag compensator so that the static velocity error constant $K_v = 100$ and the phase margin is atleast 40 degrees. (Suggested steps: Check and meet steady-state requirements, check and meet phase margin requirements, note change in bandwidth.)

Other Design Problems

Question 2. Solve *Ogata, Problem B-7-31. (Pg. 566)*. Assume closed loop bandwidth is close to the gain crossover frequency. Just plot open-loop frequency response curves on Bode diagrams.

Question 3. Solve *Ogata, Problem B-7-32. (Pg. 566)*. Design a lead compensator.

Question 4. Solve *Ogata, Problem B-7-34. (Pg. 566)*. Design a lag-lead compensator.