

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

Fall Term 2003

Problem Set 6

**Assigned:** Oct. 15, 2003

**Due:** Oct. 22, 2003

**Reading:** Nise, Chapter 8  
Nise, Chapter 9

Use Matlab wherever you can in solving the following problems. Use the `rlocus()` command, overlay selectively with `sgrid([], [])` and zoom in to examine the loci.

**Problem 1:** Nise, Ch. 8, Problem 36 (p. 484 4th Ed., p. 482 3rd Ed.)

**Problem 2:** Nise, Ch. 8, Problem 46 (p. 489 4th Ed., p. 487 3rd Ed.)

**Problem 3:** Nise, Ch. 9, Problem 1 (p. 572 4th Ed., p. 568 3rd Ed.)

**Problem 4:** Nise, Ch. 9, Problem 8 (p. 574 4th Ed., p. 570 3rd Ed.)

Note that the performance of the system with proportional control is summarized in Table 9.7.

**Problem 5:** Nise, Ch. 9, Problem 25 (p. 580 4th Ed., p. 576 3rd Ed.)