EE-154/CMPE-241
Winter 2008
Due: 6PM, 31-Jan-2008

Homework #3: Design Specifications and Control Response.

Problems are from *Franklin, Powell, Emami*, Feedback Control of Dynamic Systems, 5th Edition (FPE).

1. Assume you have a plant, $G(s) = 1/(s+a)$.
    a. What is the frequency response of this plant as per eqn. 3-11 in FPE (p. 79).
    b. Using what we know about Laplace transforms, the response of this plant to a cosine input is, $Y(s) = H(s) \times s/(s^2+w^2)$. What is y(t)?
    c. Show that (a) and (b) agree as time, t, approaches infinity ($t \rightarrow \infty$)
2. FPE 3.18.
3. FPE 3.19 (b).
4. FPE 3.21.
5. FPE 3.24.
6. FPE 3.36.
7. FPE 3.38 (b).
8. FPE 3.39 (c).