MAE 281A
NONLINEAR SYSTEMS Prof. M. Krstic

Homework 1

Due January 23, 2001

1. Khalil, Exercise 1.13, Parts 1, 2, 5, and 7.
   Use MATLAB to compute eigenvalues.

2. Khalil, Exercise 1.22.

3. Khalil, Exercise 2.5.
   This is a special case of the mean value theorem. We will use it in several control designs.

4. Khalil, Exercise 2.7.
   This exercise shows how to apply the Gronwal lemma to the case $y(t) \leq \lambda(t) + \underbrace{\rho(t)} \int \mu(\tau) y(\tau) d\tau$.

5. Khalil, Exercise 2.27.

6. Khalil, Exercise 2.34.
   Hint: Apply Gronwall lemma.