ENME 606
NONLINEAR CONTROL DESIGN — Prof. M. Krstic

Homework 3

Due March 25, 1996

1. Khalil, Exercise 3.3, Parts (1) and (2).

2. Khalil, Exercise 3.12.
   Hint: Use Chetaev's theorem with $V(x) = -\frac{1}{6}x_1^6 + \frac{1}{4}x_2^4$.

3. Khalil, Exercise 3.17, Parts (a) and (b).
   Hint: In Part (b), use LaSalle's theorem.

4. Khalil, Exercise 3.41.
   Hint: In part (b), study (local) u.a.s. of the solution $x(t) = \begin{bmatrix} 1 \\ t \end{bmatrix}$.