Math 53 Chaos!: Homework 4

due Fri Oct 16 at 5pm   . . . to give you a break after Midterm 1

The first few (10/6/15 material) are relevant to Midterm 1.

[Other than that, for exam practice I suggest you write out definitions and the key theorems from Ch. 1–2 from memory, so you can reliably recall and use them. Then test yourself on old exams.]

T3.2 (easy and has some review of Ch. 1. Be sure to find Lyapunov *exponent* not *number*. Also to answer each question posed.)

T3.3 (easy but good recap of a proof technique from before)

3.1 great review. [Hint: part d the key word is attracting. Factor out the roots as one, not separately, and later look for product of roots. Part e sketch graph and $y = x$ and think about conjugacy].

T3.8 (please show why the C' evaluations cancel out)

T3.10 A lovely result with very little effort, now you have the machinery.

3.4

3.5

3.7 This is a proof, so you will need to rigorously satisfy the requirement of being *dense*. Recap this first. (And look back to 1.6 from HW2.)

3.10 (satisfying warm-up for Sharkovskii proof.) Use the four intervals $[x_1, x_2]$, etc.