

# Math 53 Chaos!: Homework 4–revised

due Fri Oct 21 at 5pm ... to give you a break after Midterm 1

The first few (Thursday's 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.]

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

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 (use your well-oiled machinery)

3.10 (satisfying warm-up for Sharkovskii proof)