

Recommended Revision Tips

1. Learn / memorise every definition
2. // // // result
(Lemma, theorem, proposition, corollary)
3. As far as possible, learn / memorise
proofs of results (e.g. if the proof is
< 2 pages)
4. For specific examples of f , be
able to compute : fixed points
: periodic points
: eventually periodic points

5. Be able to compute multipliers

$$\left((f^n)'(x_0) = \prod_{i=0}^{n-1} f'(x_i) \right)$$

of periodic points/orbits, and use it to decide if an orbit is attracting or repelling.

6. Be able to identify a basin of attraction (of e.g. an attractive fixed point).

7. Diffeomorphisms — know well the theory, including definitions (diffeomorphism, order-preserving, order-reversing), results about existence/uniqueness/non-existence of fixed/periodic points, including proofs.

8. Logistic family : Know well, and be able to prove (using 'multiplier' arguments) when fixed points and periodic points are attracting (i.e. for which ranges of parameter values)

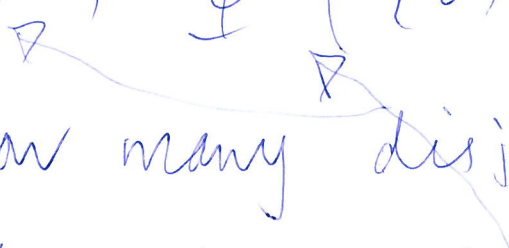
- Formulae for fixed points
- -- -- period-2 points
- Period-doubling
- Feigenbaum constant

9. Sharkovskii

- Know well Sharkovskii's order
- -- -- Sharkovskii's Theorem

Be able to apply these

10. Iterated function systems

- Know the definition $(\phi_1, \dots, \phi_k, \mathbb{I})$
- Be familiar with examples (on $\mathbb{R}, \mathbb{R}^2$)
- Be able to compute sets such as $\mathbb{I}([0,1])$, $\mathbb{I}^2([0,1])$,

count how many disjoint closed sub-intervals make up these sets, and the lengths of these sub-intervals
- Be able to compute Box Dimension