E. Dummit's Math 3543 ~ Dynamics, Chaos, and Fractals, Spring 2025 ~ Midterm 2 Topics List

---

- Computation of attracting cycles, orbit diagrams
  - Suggested review: homework #5 problems 1, 2, 3
  - Suggested reading: lecture notes 2.2.1-2.2.2.
- The Cantor ternary set, nested intervals theorem, iterated inverse images
  - Suggested review: homework #5 problems 4, 5 + homework #6 problem 3
  - Suggested reading: lecture notes 3.1.2.
- The sequence space and shift map
  - Suggested review: homework #6 problems 1, 2
  - Suggested reading: lecture notes 3.1.3.
- Homeomorphisms and conjugation, dense sets
  - Suggested review: homework #6 problems 4, 5, 6 + homework #7 problem 1
  - Suggested reading: lecture notes 3.1.4-3.1.5.
- Transitive maps, sensitivity to initial conditions, definition of chaos
  - Suggested review: homework #7 problems 1, 4 + homework #8 problem 5
  - Suggested reading: lecture notes 3.2.1-3.2.2
- Sarkovskii's theorem
  - Suggested review: homework #7 problems 3, 5
  - Suggested reading: lecture notes 3.3.1-3.3.2
- Standard fractal constructions, topological dimension
  - Suggested review: homework #8 problems 1, 2, 4
  - Suggested reading: lecture notes 4.1-4.2.1
