

Homework Three

Chaos and Fractals

College of the Atlantic

Due Friday 21 January, 2022¹

There is only one part to this assignment. There is no WeBWorK this week.

Part 1: Problems from the Textbook. Here are some instructions for how to submit this part of the assignment.

- Do the problems by hand using pencil (or pen) and paper. There is no need to type of this assignment.
- Make a pdf scan of your work using genius scan or some similar scanning app. Please make the homework into a single pdf, not multiple pdfs.
- Submit the assignment on google classroom. Please don't email it to me. (Between my two classes I will be receiving around 45 assignments a week. Keeping track of them all in email is challenging.)
- **If you want, do these problems in pairs.** Most of these problems are exploratory in nature, and it might be fun to have a co-explorer. If you do work in pairs, please submit only one set of solutions for the two of you. If you work with a friend and your friend submits the work, please submit an empty assignment and add a comment letting me know who you worked with. Thanks.

Here are the textbook problems

- Chapter 7, problem 7.2, page 65.
- Chapter 9, problem 9.5, page 43.
- Chapter 9, problem 9.7, page 43.
- Chapter 10, problem 10.1, page 43.
- *Optional:* Chapter 7, problems 7.9–11., page 84. These problems have you investigate fixed points and cycles for the logistic equation using a modest amount of algebra.
- *Optional:* Chapter 10, problems 10.3–10.4. These problems dig deeper into the definition of SDIC.

The page numbers above refer to the pagination in the pdf itself—i.e. printed on the pages—not the overall page count of the pdf, which includes the frontmatter.

¹If you need more time, that's ok. Just let me know. Thanks!