Homework for Math 5410 §1, Fall 2023

A. Treibergs, Instructor

September 21, 2023

Our text is by Morris Hirsch, Stephen Smale & Robert Devaney, *Differential Equations, Dynamical Systems, and an Introduction to Chaos* 3rd ed., Academic Press, 2013. Please read the relevant sections in the text as well as any cited reference. Assignments are due the following Friday, or on Dec. 1, whichever comes first.

Homework is to be written on paper. Your written work reflects your professionalism. Make answers complete and self contained. This means that you should copy or paraphrase each question, provide adequate explanation to help the reader understand the structure of your argument, be thorough in the details, state any theorem that you use and proofread your answer.

Homework from Wednesday to Tuesday will be due Friday. Homework is to be handed in by 4:00 pm, Fridays to be considered on time. Late homework that is up to one week late will receive half credit. Homework that is more than one week late will receive no credit at all.

Please hand in problems A on Friday, August 25.

A. Exercises from the text by Hirsch, Smale & Devaney:

16[1-4, 9, 14]

Please hand in problems B on Friday, Sept. 1.

B. Exercises from the text by Hirsch, Smale & Devaney:

37[2d, 7, 9, 10, 11, 14]

Please hand in problems C on Friday, Sept. 8.

C. Exercises from the text by Hirsch, Smale & Devaney:

57[4, 5, 7, 10, 14]

Please hand in problems D on Friday, Sept. 15.

D. Exercises from the text by Hirsch, Smale & Devaney:

71[1, 2, 3, 4, 5]
Please hand in problems E on Friday, Sept. 22.

E. Exercises from the text by Hirsch, Smale & Devaney:

\[103[4, 5 \text{ any two, 6, 7, 11, 13, 14, 15}]\]

Please hand in problems F on Friday, Sept. 29.

F. Exercises from the text by Hirsch, Smale & Devaney:

\[135[1 \text{ any three, 4, 7abc, 9, 11}]\]