Assignment #1

Due Wednesday, 4 September 2024, at the start of class

Make sure you have a copy of the textbook:

> Greenbaum & Chartier, *Numerical Methods: Design, Analysis, and Computer Implementation of Algorithms*, Princeton University Press 2012.

Please lightly read Chapter 1; there will be no exercises on this Chapter.

Please read Chapter 2 in detail. Will need to find MATLAB online, or download a copy, or choose and start another language. The main purpose of Chapter 2 and this Assignment is to familiarize you with MATLAB (equivalently, OCTAVE). Even if you use another language for the rest of the semester, it is probably easiest to do the problems here in MATLAB or OCTAVE. (Modifications for JULIA are straightforward.)

If you are new to MATLAB, it would be smart to *input and check* MATLAB *example done in Chapter 2*, as well as doing the Exercises below. Make sure you can create a new M-file (script), save it, edit it, and run it at the command line by typing its name. Similarly for function M-files.

When you turn in Assignments, two expectations always apply:

1. The *commands that you used must be shown*, along with the results.
2. Turn in a non-wasteful and readable single document. In particular, edit your result to remove excess space, *but* keep a clear distinction between your by-hand calculations, programs, input commands, and computed results. My solutions will be good style examples.

Do the following exercises:

CHAPTER 2

- Exercise 2 on page 32.
- Exercise 3 on page 32.
- Exercise 4 on page 32. (*The table should be neat, have three columns, and take about 14 lines only.*)
- Exercise 6 (a), (c) on page 34.
- Exercise 9 on page 35.
- Extra Credit. Can you do exercise 3 on page 32 (above) in less than 80 total characters, including spaces and separators?