

CAS MA539 – Methods of Scientific Computing

Boston University, Fall 2005

Homework 1

The following problems may be found in your textbook, at the end of Chapter 1. Solutions are due Wednesday, September 21, at the start of class.

Exercises 1.11, 1.12, and 1.14.

These three questions are more analytical in nature, meaning that it is natural to use formal mathematical arguments to answer them. However, you should feel free to also include computational work if you think it will be illustrative (but such work *alone* is not sufficient).

Computer Problems 1.8 and 1.9.

These two problems ask you to use the computer as a *laboratory* in addressing certain specific questions. You will likely end up doing a reasonable amount of exploratory work before settling upon what you decide to be your “final” results. In showing your work for these problems I only wish to see such final results (in well thought out plots, tables, or whatever, labeled carefully and numbered in a clear fashion), accompanied by an adequate amount of explanatory text.

NOTE: For problem 1.8, where you are asked to use both single and double precision, you will want to either do this in something like C (where you can explicitly declare these types), or in something like Matlab (where you can similarly control the precisions used).