ASEN 5007 Homework Assignment #4 (Long)
Chapters 8–9 of Notes
Due Thursday September 28, 2017.

Please don’t forget to attach this cover sheet to your returned homework and write your name(s) on it.

This HW is a bit long: 4 exercises, several involving programming. But it is a reduction from previous years, since Exercises for Ch 10 will be moved to HW 5.

Four exercises:
8.1
9.1
9.5
9.6

Grading weights: given at the start of each Exercise.

Solution for 8.1 provided in pseudo-code to facilitate use of the higher level language of your choice. Code added 9/12/16 to Chapter 8. Pseudo-code for 9.1 will be added this weekend.

Exercise 9.6 was included in 2004, expanded from a ASEN Ph.D Preliminary Exam question given in 1998 and 2001. Most of the work here is understanding what is being asked. If you need clarification, please read the Hints.

Exercises 8.1 and 9.1 require programming. For 9.5 it is optional but it will speed up solving the symbolic systems. Mathematica code is given in the Notes for 8.1 and 9.1 as a programming guide but it is not web-posted to encourage actual coding. Code in Matlab may be helped by studying the pseudo-code provided for those Exercises.

Note on Mathematica Plotting. If you are using Mathematica Version 6.0 or higher for Exercises that make use of ListPlot, that statement should have an explicit DisplayFunction specification; else no plot will appear. For example:

ListPlot[ew,AxesOrigin->{5,-8},Frame->True, PlotStyle->
{AbsolutePointSize[4],AbsoluteThickness[2],RGBColor[1,0,0]},
  Joined->True,AxesLabel->"Log10(w)","Log10(u error)"},
 DisplayFunction->Print];

Note that the option keyword PlotJoined has been replaced by Joined since v.6. The DisplayFunction option can be omitted if the semicolon at the end is removed.

OVER For Midterm 1 Announcement
First Midterm Exam Announcement

Midterm Exam #1 date for on-campus students: Thursday October 12, 2017 at 9:30am, ECCR 105.
This also applies to distance students who are able to take it on campus at that date and time. Other distance students should make arrangements with instructor.

*Exam is open book:* posted lecture notes and homeworks are allowed. Length: 75 minutes. Review class on Tu October 4 will be on tape.

Exam covers selected material from Part I:
Ch 1: none. Ch 2: all. Ch 3: §3.1 through §3.4, and §3.6.1. Ch 4: none. Ch 5: §5.1–§5.2. Ch 6: skim for terminology but no specific questions on it. Ch 7: all. Ch 8–9: both but skip all sections marked with * in the Notes (those are usually displayed in fine print). Ch 10: omit.