Math 20750
Spring, 2016

Assignment 12, due April 15

Reread §§9.4 and 9.6 and read §§9.7 and 4.1–4.4 in Polking, Boggess and Anrold.

Do:
§9.4 #19,26
§9.6 #10,11,12,13,14,30,32,34,46 (Compare #10 with §9.1 #53.)
§9.7 #4,6,8 You may use **pplane** to draw the phase portraits.
§4.1 #18,21
§4.2 #17,18
§4.3 #27,28,30,35

Read chapter 11 in *Differential Equations with MATLAB®*. You may skip §11.2.

Do as a MATLAB group:
Problem Set D #3,12

Use a separate m-file for each problem. Staple the published solutions together in order. Make sure the names of all members of your MATLAB group are on MATLAB assignment before turning it in.

Hints for Problem Set D #3

- One way to do the second part of (a) is to use the **Events** option for **ode45** which lets you detect significant events (see §9.6.3).
  - What are the events you could you use to find the first time the pendulum returns to its original position?
  - When you do this, do the results confirm your estimates from the plots?
- Be sure to anwer the question at the end of (b).
- Be sure to answer all of the questions in (d).