Scientific Computing, G63.2043/G22.2112
Spring 2000
Professor Leslie Greengard

Homework 7
Due: May 4 or so

1. Write a MATLAB code to implement the forward Euler method, the backward Euler method and the trapezoidal rule for the model problem $y' = \lambda y, y(0) = 1$. Try them on the interval $[0, 1]$ for $\lambda = -1$ and $\lambda = -1000$.

2. Compare the number of steps for $\lambda = -1$ with the number needed by the MATLAB codes **ode23** and **ode45**. for 3 and six digit accuracy.

3. Do some work using the FFT - to be discussed in class.

Note: By a "MATLAB code" for the above problems, I mean a script contained in an M-file.