Computer Lab

- Create a directory **MA302**.
  - ◇ Move all MA302 files into directory **MA302**.
  - ◇ Make sure you have the files *myeuler.m*, *predprey.m*, *problem34.m*, and any of your creations in this directory.
  - ◇ Change into this directory.
- Log into **MATLAB**.
- Begin to enter the global variables, initial conditions, length of integration, and number of steps. If you are not sure what to do, read **lecture2.ps**.
- Use the *myeuler.m* to solve the differential equations *problem34.m*, *predprey.m*, and those of your own.
  - ◇ Plot the solutions.
  - ◇ Hold the pictures (The command is **hold**.)
  - ◇ Open another window to draw additional graphs. (The command is **figure(k)** where k is the window id.) It is a good idea to separate graphs problem by problem.
- Use the command **odeset** to set the options $RelTol = 1.e-7$ and $AbsTol = 1.e-7$. Use the MATLAB online routines *ode23* and *ode45* to solve the same problems you have just solved using *myeuler*.
  - ◇ Plot the solutions on existing figures.
  - ◇ Compare the results (Pay attention to why the numerical solution from *myeuler* is not a closed loop.)
- Change the parameters of your set-up. Do more experiments.