Math 712, **Homework Set 10**, December 7, 2005
Due Wednesday, December 14

---

1. Redo Problem 7.3.9 from the textbook using the fourth-order accurate Mitchell-Fairweather scheme. Confirm the fourth-order accuracy in the usual way. NOTE: the scheme is seond-order accurate in time so you will have to pick the time step appropriatelly so that the time and space errors are comparable at a given mesh size h.

2. Do Problem 7.3.9 from the textbook (Peaceman-Rachford scheme) but this time use the exact solution to impose non-homogeneous Neumann boundary conditions on all four sides of the spatial domain. Produce a log-log plot of this error *vs.* the mesh size h and check the slope.