## Math. 420, Fall 2005 Homework Set 4 Assigned September 15, due September 22

First, some series solutions: 2.7,#1, #2, #3, #4.Now, a bit of numerical methods:

3.1-3.2, #3. Note that this requires a *proof*. Surely you will need induction.

At least (and probably at most once) in your life you should actually work out some numerical solution:

3.1-3.2#3, 4.

3.1-3.2 #10 is rather delicate, at least parts (c) and (d) are. I include them so that people don't start saying use an implicit method" too lightly (this is often heard from numerical analysts who don't actually ever solve anything).

3.3#5 This brings up the question of software. I guess my preference is that people should write their own program in maple, matlab or mathematica, but if this is too difficult, I will try to get at least some version on the web by the weekend.

This should be enough!