

CSUMS Seminar Eight – Wednesday, November 5, 2008

Computer Tasks

With your partner, use `lfd.m` and create m -files `soln1.m`, `soln2.m`, and `soln3.m` and script file `finitediff.m`. In `soln1.m`, write a function for the solution to Problem 1 on Page 661, in `soln2.m`, write a function for the solution to Problem 5 on Page 661, and in `soln3.m`, write a function for the solution to Problem 7 on Page 662. The contents of `finitediff.m` should contain code to show your solution and measure the error to Problems 1a,b and Problem 5. Your code will look like the code in the script file `soln.m`. You will also solve Problem 7 on Page 662. Add comments in the file `finitediff.m` to indicate your answers and explanation for Problems 7b,c. Obviously, your $p(x)$, $q(x)$, and $r(x)$ will change with each problem in the m -file `lfd.m` – submit `lfd.m` with $p(x)$, $q(x)$, and $r(x)$ from Problem 7 and make sure the file contains code for p , q , and r for the other problems, but commented out.

Analysis Tasks

Prove Theorem 11.3. (*Hint*: Problem 9 on Page 662 will be helpful.)

To Turn In:

Email your Matlab files to Professors Stolarska and Van Fleet (`mastolarska`, `pjvanfleet`) on or before noon on Tuesday, November 11, 2008. Submit your solution electronically or turn in by hand at the start of the November 12 seminar.