

Homework 7  
due March 15, 2007

If you find yourself without enough information, make and justify a reasonable approximation. Please answer all parts of a question! (This is good practice for an exam setting.)

1. Chapra and Canale, problem 11.8 (iterative solution to a matrix equation)
2. Solve for an  $(x, y)$  point at which the functions  $f(x, y)$  and  $g(x, y)$  in Chapra and Canale problem 11.16 both equal zero. Use the nonlinear Newton-Raphson method discussed in class. You **don't** need to answer parts a and b of this question in the book.
3. Chapra and Canale, problems 18.1 (b only) and 18.2. Then use the same first and second order Newton interpolating polynomials to estimate  $\log(12)$ . Which process was more accurate, interpolation or extrapolation?
4. Chapra and Canale, problems 18.22 (interpolation, cont'd).
5. See the web page for a large matrix problem and instructions about using iteration to check/improve the accuracy of the solution.