

Assignment #3

DUE *Friday 16 October, 2009*

Goal of this assignment: Learn and implement Newton's method and the secant method. Understand how Newton's method can fail.

Do these exercises in Kincaid & Cheney (pages 90–99):

- Problems 3.2, exercise 9.
- Problems 3.2, exercise 10.
- Problems 3.2, exercise 1. (As far as I can tell, the answer can not be found exactly. But do as much as you can “by hand” and “by thought”. Otherwise it will make little sense.)
- Problems 3.2, exercise 6.
- Problems 3.2, exercise 14.
- Problems 3.2, exercise 17.
- Computer Problems 3.2, exercise 1.
- Computer Problems 3.2, exercise 3. (The “positive minimum” occurs on the interval $[0, \pi/2]$. You might want to plot $f(x)$ and $f'(x)$ before blindly starting into Newton's method.)
- Computer Problems 3.2, exercise 5. (Again, plot first.)
- Problems 3.3, exercise 4.
- Computer Problems 3.3, exercise 1. (Show me the program *and* show me how it applies to the three problems.)