

University of Central Florida

Department of Electrical Engineering and Computer Science
COT 4500 Numerical Calculus
Quiz 2 (Monday 18th, Spring 2013)

For all exercises show all your work step by step.

- 1.- Show that when Newton's method is applied to the equation $x^2 - a = 0$, the resulting iteration function is $g(x) = \frac{1}{2}(x + \frac{a}{x})$. (20 points)
- 2.- Using pseudocode, write an algorithm to implement Newton's method. (20 points)
- 3.- Using pseudocode, write an algorithm to implement Secant method. (20 points)
- 4.- Given the function $f(x) = x - 4\ln(x) = 0$, use Newton's Method with $p_0 = 1.3$ to calculate p_1 and p_2 . (20 points)
- 5.- Given the function $f(x) = x - 4\ln(x) = 0$, use Secant Method with $p_0 = 1.3$ and $p_1 = 1.7$ to calculate p_2 and p_3 . (20 points)