

Assignment 1

Scientific Computing with MATLAB

due: Oct 4, 2018

1. Newton's Method for Square Root

Write a MATLAB script to estimate the square root of any number using [Newton's method](#). Write it so that the number whose square root is to be taken, and the number of iterations are both parameters (variables) that can be set by the user or the programmer. You can choose the initial guess on your own, use whatever you like. I suggest the number 10.0 as in the Wikipedia example.

Find the square root of 612 using 5 iterations. Try it again using 10 iterations.

Bonus

Examine the relationship between the square root of 612 as found by Newton's method as a function of the number of iterations. Examine iterations from 1 through to 10. If you want to get a head start on how to visualize data, you can try to plot this relationship.

Repeat this using different starting guesses, e.g. 5, 10, 20, 40, 80

Plotting hints: in MATLAB you can use the `plot()` command to generate a simple line plot.