MATLAB: Assignment 3

Due on Monday, July 15th in class

Problem 1

In this exercise, you will code Newton's method in MATLAB.

Goal: Write a MATLAB script to approximate the cube root $\sqrt[3]{a}$ of a given number a with accuracy roughly within 10^{-8}. Use initial guess $x_0 = \dfrac{a}{2}$ and maximum 100 iterations.

Instructions

- Use $f(x) = x^3 - a$, where $a = 2 + \alpha$, and α is the **last digit** of your NAU user name.
- For $f'(x)$, define the anonymous function `fprime`
- Explain steps by commenting on them.
- Once you have completed the problem, generate a pdf file with the results using the **Publish** option in matlab. **Please give me a hard copy of the pdf file.**
- Do not just copy and paste the code; it will not improve your MATLAB skills, and most importantly you will get an error.
- **Failure to follow these instructions will result in loss points (up to the full amount of the homework total).**