

CST8233: Lab #9

Numerical Differentiation

Objective

The objective of this lab is to familiarize the student with the theory topics covered in Week 10. Mainly, this lab focuses on **Numerical differentiation**

Earning

There is no mark for this lab. However, each student should finish the lab's requirements within the lab session and demonstrate the working code to the instructor.

Discussion

Write a c/c++ Program to compute the first derivative of the function: $f(x) = x^3$

To test your program:

Enter the total no. of equally spaced data points:

3

Enter the value of x's:

2.75

3

3.25

Enter the point where first derivative is calculated:

3

the value of y's :

20.796

27

34.328

The result is:

Forward method = 29.31 error = 8.56%

Backward Method = 24.812 error= 8.102%

Enteral method = 27.0625 error= 0.23%