s Bismillahir Rahmanir Rahim

International Islamic University Chittagong

Department of Computer Science & Engineering

Lab Assignment-2

CSE 4746 Numerical Methods Lab

---

1. The following values of f (x) are given.

x	1	2	3	4	5
y = f(x)	1	8	27	64	125

   Write a program to find difference table for the above values.

2. The following values of f (x) are given.

x	1	2	3	4	5
y = f(x)	1	8	27	64	125

   Write a program to find the values of y when x = 1.7 by using Newton's forward interpolation formula.

3. The following values of f (x) are given.

x	1	2	3	4	5
y = f(x)	1	8	27	64	125

   Write a program to find the values of y when x = 4.7 by using Newton's backward interpolation formula.

4. The following values of f (x) are given.

x	1	2	3	4	5
y = f(x)	1	8	27	64	125

   Write a program to find the values of x for which f (x) = 85 by using Lagrange's inverse interpolation formula.

5. The following values of f (x) are given. Prepare the divided difference table for the following data

x	1	3	4	6	10
y = f(x)	0	18	58	190	920

   Write a program to find the values of y when x = 2.7 by using Newton's divided difference formula.