NUMERICAL METHODS LABORATORY(MA29202) & NUMERICAL TECHNIQUES LABORATORY(MA39110)

Assignment-4 based on the Newton's and Lagrange Interpolating Polynomial [1]

1. Determine the polynomial of degree ≤ 5, using Newton's divided-differences that interpolates the table

x	1.0	2.0	3.0	4.0	5.0	6.0
f(x)	14.5	19.5	30.5	53.5	94.5	159.5

   Use the resulting polynomial to estimate the value of $f(4.5)$, and compare this with the exact value, which is $f(4.5) = 71.375$.

2. Determine the Lagrange polynomial that interpolates the data in the following table.

x	0	2	4	6
f(x)	1	-1	3	4

[1] Sent on: `March 08, 2023`.