Assignment I

1. Given points: $(1, 2), (2, 3), (4, 9)$, construct a polynomial of degree ≤ 2 passing through all points using Lagrange's formula.

2. Find the Newton's Interpolation polynomial of degree ≤ 3 that interpolates $(-2; 1), (0; 1), (1; 4), (2, 17)$.

3. Find the interpolating polynomial of degree ≤ 5 for the data:

x	y
1	1
2	3
3	7
4	21
5	31
6	43

4. Find $\dfrac{dy}{dx}$ at $x = 1.1, \text{and}\, x = 1.6$ for the following data.

x	1.0	1.1	1.2	1.3	1.4	1.5	1.6
y	7.989	8.403	8.781	9.129	9.451	9.750	10.031