

1. Find the Lagrange and Newton coefficients for the following data:

$$f(x) = x^3 + 4x$$

(1, 0.2213) (1.7, 0.9881) (1.9, -0.3442) (2.1, 1.3875) (2.5, -0.9887)

What are the Lagrange polynomial coefficients ?

What are the Newton polynomial coefficients ?

2.

$$f(x) = \cos(x) + 2x + 1$$

x	1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7
y	0.1411	-0.6878	-0.7111	-0.8346	-0.8992	-0.9021	-0.9533	0.3116	0.4921

What are the Lagrange polynomial coefficients ?

What are the Newton polynomial coefficients ?

3. Find the least-square polynomial coefficients of degree 1, 2, 3, and 4.

Hours spent on essay	Grade
6	82
10	88
2	56
4	64
6	77
7	92
0	23
1	41
8	80
5	59
3	47

[1 1.7 1.9 2.1 2.5]