

Interpolation Assignment Questions

Cosmic Charade

Problem 1

Given the following data points:

$$x = [1, 2, 3, 4, 5], \quad y = [2, 4, 6, 8, 10]$$

Use **linear interpolation** to estimate the value of y when $x = 3.5$ and $x = 4.5$.

Deliverable: Implement the linear interpolation method and compute the values for the specified x .

Problem 2

For the data points:

$$x = [1, 2, 3], \quad y = [2, 3, 5]$$

Use **Lagrange interpolation** to find a polynomial that fits these points. Then, estimate the value of y for $x = 2.5$.

Deliverable: Implement the Lagrange interpolation polynomial and use it to find the interpolated value.

