第二次作业

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I-III: Newton Interpolation for Function Approximation

Description: This code employs the Newton interpolation technique to derive an approximation polynomial for a specific mathematical function. It subsequently applies this interpolation method to estimate the function's values for different x inputs. The code also includes Chebyshev interpolation for a related function.

Results: The code calculates and presents the interpolated values of the specified functions at various x points.

IV: Car Data Interpolation

Description: This code focuses on interpolating car-related data to make predictions about the car's position and velocity at a specific time (t=10 seconds). Additionally, it verifies whether the car exceeds a predefined speed limit.

Results: It computes and displays the anticipated position and velocity of the car at t=10 seconds and assesses if the car surpasses the speed limit.

V: Larvae Weight Reduction

Description: This code employs Newton's interpolation to estimate the weight patterns of two groups of larvae reared on different types of leaves. It further projects whether the larvae will experience weight loss over the course of an additional 15 days.

Results: The code computes and reports the predicted weight trends for both larvae groups after 43 time units and identifies whether both groups are expected to undergo weight reduction.