

Homework

1. Write down the first 3 Newton polynomials p_0, p_1, p_2 (don't solve for the unknowns) for the data

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

2. Find a Newton's form of interpolating polynomial of degree 2 that interpolates the table

x	0.2	0.4	0.6
y	-0.95	-0.82	-0.65

Do your work on paper, but you can use matlab for arithmetic calculations.

3. Use your polynomial from problem 2. to approximate $f'(0.5)$. Plot the data in problem 2. and your polynomial and compare your approximation to the graph. Explain.
4. Given that $p(x) = 7.1 - 3(x - 4.5)$ is the Newton interpolating polynomial for the data

x	4.5	6.1
y	7.1	2.3

Find the Newton interpolating polynomial for the data

x	4.5	6.1	8.5
y	7.1	2.3	1.1