

3 Homework (Newton's method and Approximation)

Solve the following problems from the textbook:

page 74: 2, 5 a),c), 6 b), e), 9

The next problems are not from the textbook:

- 1) Find the Bernstein basis polynomials for $n = 2, 3$
- 2) Write the Bernstein polynomials of degree $n = 2$ and $n = 3$ to approximate the function $f(x) = \sin x$ on $[0, 1]$ interval.
- 3) Estimate the approximation error when approximating $f(x) = \sin x$ by $B_n(f, x)$, using the modulus of continuity.