Assignment 1

MAS565 Numerical Analysis **Spring 2025**
Prof. Chang-Ock Lee **Due Date: March 10 (Mon)**

Note: Submit your hand-written homework in class before the beginning of the class. If you did computer programming work, submit your code and results in KLMS before the beginning of the class, too.

- Solve the following problems.

  Chapter 2: 2, 3, 4

- Computer Assignment: For a given function f, find an interpolating polynomial p to f at the uniformly distributed nodes with step size h:

  1. $f(x) = \sin x$, on $[0, 2]$ with $h = 0.25$,
  2. $f(x) = 1/(1 + x^2)$ on [-5,5] with $h = 1$.
  3. $f(x) = \sqrt{x}$, on $[0, 1]$ with $h = 0.1$,

  For each function f, plot together the graph of f and the graph of its interpolant p. Comment on your observations.