

MATH 212: Homework 8

Due at Final Exam

Numbered problems are from *Numerical Analysis* by L. Ridgway Scott. Other problems are from *An Introduction to Numerical Analysis* by Süli and Mayers (this is just for proper credit, you shouldn't need to reference that book). MORE PROBLEMS MAY BE ADDED.

Problem 1. Chapter 12: 3,4,22

Problem 2. Chapter 13: 3,5

Problem 3. Construct the minimax polynomial $p_1 \in \mathcal{P}_1$ on the interval $[-1, 2]$ for the function $f(x) = |x|$.

Problem 4. Construct the orthogonal polynomials of degree 0, 1 and 2 on the interval $(0, 1)$ with the weight function $w(x) = -\log(x)$.