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 $p_1 \in P_1$ 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 $w(x) = -\log(x)$. 