Math 6140 - Assignment 8

Due March 12, 2025

A. Let $p(x) = x^3 + x + 1$ in $F_2[x]$. Is $F_2[x]/(p(x))$ a splitting field for $p(x)$?
B. Show that for p prime, $x^{p-1} + x^{p-2} + \cdots + x + 1 \in \mathbb{Q}[x]$ is irreducible.