Fall 2022, Math 522: Preliminary Problem Set 14
Due: Wednesday, November 30th, 2022
Polynomial Arithmetic

Preliminary problems. These problems should be completed before discussion.

(P1) Use the division algorithm (i.e,, polynomial long division) to divide $f(x) = x^5 + x^3 + x + 1$ by $g(x) = 2x^2 + 5x + 2$, viewed as elements of $\mathbb{Q}[x]$. Write your final answer in the form $f(x) = q(x)g(x) + r(x)$.

(P2) Based on your answer in (P1), does $g(x)$ divide $f(x)$?