

Fall 2022, Math 522: Preliminary Problem Set 15
Due: Wednesday, December 7th, 2022
Cyclotomic Polynomials

Preliminary problems. These problems should be completed before discussion.

(P1) Use polynomial long division to determine whether $x^2 - x + 1$ is a factor of $x^4 + x^3 + x^2 + x + 1$.

(P2) Write down the first 6 cyclotomic polynomials, that is, $\Phi_1(x), \Phi_2(x), \dots, \Phi_6(x)$.

(P3) Write down the “big theorem” from class (this will be useful both during discussion **and** when working on the homework).