

Winter 2017, Math 148: Week 3 Preliminary Problems
Due: Thursday, January 26th, 2017
Polynomials

Preliminary problems. These problems should be completed before discussion on Thursday.

(P1) Use the division algorithm to divide $f(x) = x^5 + x^3 + x + 1$ by $g(x) = 3x^2 + 5x + 2$, viewed as elements of $\mathbb{Z}_7[x]$. Write your final answer in the form $f(x) = q(x)g(x) + r(x)$.

(P2) Find all roots of $x^2 + 2$ over \mathbb{Z}_{11} .