

Math 491, Friday, April 10, Chapter 21, Finite Fields

Mon 22

separable example from Thursday (45 min)

Tue 22

Fact F finite field $|F| = p^n$

Thu 22

$\Rightarrow F$ is the splitting field of

Fri 23

(separable) $x^{p^n} - x$ over \mathbb{Z}_p

Mon Problems

Sage 22

Fact F is exactly the p^n roots of $x^{p^n} - x$.

Sage 23 - April 30

Ex $0^{p^n} - 0 = 0 \quad \checkmark$

$$r^{p^n} - r = 0$$

$$1^{p^n} - 1 = 0 \quad \checkmark$$

$$\Rightarrow r^{p^n} = r \quad r \neq 0$$

$r^{p^n-1} = 1$ (mult. identity)

$P^n, P^m \quad m|n \quad P^{n-1} \text{ v. } P^n - 1$