

PROBLEM SET 3, 25600 SECTION 31

Due Friday April 17 in class.

1. (5 points) Fraleigh, problem 31-35. 5 bonus points for doing it for characteristic 2 as well.
 2. (5 points) Fraleigh, problem 31-36.
 3. (5 points) Fraleigh, problem 31-38. We used this implicitly when proving that any field has an algebraic closure.
 4. (10 points) Fraleigh, problem 32-2.
 5. (5 points) Fraleigh, problem 32-3.
 6. (5 points) Fraleigh, problem 32-6.
- Challenge: (20 points) Prove that a regular n -gon is constructible if and only if n is a product of a power of 2 and any number of distinct Fermat primes.