

1. Problems §10.5, #14(i,ii,iii) and #15(i,ii,iii).
2. Let n be a prime number. Prove that there exists an irreducible polynomial of degree 3 over \mathbb{Z}_n . (Hence, finite fields of size n^3 exist.)
3. Problem §10.5, #20.
4. Problem §10.5, #24.
5. Problem §10.5, #28.