

MAT312-AMS351

Applied Algebra Homeworkset 6

Due Wednesday, November 13

1. Do problems 1, 2, 3, 4 from section 4.3.
2. Show that \mathbb{Z}_{10} is not a group under multiplication, but it is a group under addition.
3. Let $n > 0$ be an integer, and let $\sigma, \tau \in S(n)$ be two permutations. If σ is the r -cycle $\sigma = (i_1, i_2, \dots, i_r)$, prove that $\tau\sigma\tau^{-1}$ is also an r -cycle.
4. Prove that the set of all invertible $n \times n$ matrices with complex coefficients $GL(n, \mathbb{C})$ is a group under multiplication.
5. Do Worksheet #4.