

Math 417: Homework 3

Due Friday, September 17, 2021

1. Goodman, exercise 1.7.13. The aim of this exercise is to prove that, if $[a]$ does not have a multiplicative inverse in \mathbb{Z}_n , then there exists $[b] \neq [0]$ such that $[a][b] = [0]$ in \mathbb{Z}_n . The problem statement presents an outline of the proof. Your job is to fill in this outline by proving each of the assertions.
2. Goodman, exercise 1.7.14
3. Goodman, exercise 1.7.16.
4. Goodman, exercise 2.1.3.
5. Goodman, exercise 2.1.4.
6. Goodman, exercise 2.1.5.
7. Goodman, exercise 2.1.6.
8. Goodman, exercise 2.1.7.