

*** 문항별 10 점 ***

Graduation Exam (Modern Algebra I)
Spring (2024)

Problem 1 What is the definition of a normal subgroup of a given group G ?

Problem 2 Let G be a group and N be a normal subgroup of G . Show that the following set

$$\{gN : g \in G\}$$

has a group structure.

Problem 3 Find all $c \in \mathbb{Z}_5$ such that $\mathbb{Z}_5[x]/\langle x^2 + x + c \rangle$ is a field.