

PROBLEM SET # 4
MATH 252

Due September 30.

1. Let $H \subset K \subset G$. Show that

$$\text{Ind}_K^G \text{Ind}_H^K \rho \cong \text{Ind}_H^G \rho$$

for any representation ρ of H .

2. Let G be the group of matrices

$$\begin{pmatrix} 1 & x & y \\ 0 & 1 & z \\ 0 & 0 & 1 \end{pmatrix}$$

where x, y, z are elements of the finite field \mathbb{F}_5 . Classify irreducible representations of G over \mathbb{C} .