

PROBLEM SET # 1
MATH 252

Due September 9.

1. Classify irreducible representations of \mathbb{Z} over \mathbb{C} .
2. Classify one-dimensional representations of S_n over any field k such that $\text{char } k \neq 2$.
3. Let ρ be an irreducible representation of G and σ be an irreducible representation of H . Is it always true that the exterior tensor product of ρ and σ is an irreducible representation of $G \times H$?