

Problem 25

Using the orthogonality relations of matrix elements of irreps, show that

$$\int_G \chi_\mu(g) \chi_\nu(g^{-1}h) dg = \frac{\delta_{\mu\nu}}{n_\mu} \chi_\nu(h)$$

Problem 26¹

Perform explicit isotypic decomposition of the permutation representation of S_3 on \mathbb{R}^3 using projection operators.

¹pp.272-273 of [GM]