

HW 3

- ① Prove that the number of self-conjugate ^{irreducible} representation ~~is~~ equals the number of self-inverse classes. And the number of complex representation equals the number of non self-inverse classes.
- ② Construct the character table for a general D_{2n} group.
- ③ Consider a system with $2n$ hydrogen atoms placed at the vertices of a regular $2n$ -polygon. Denote the atomic orbital at each position as $|1\rangle, |2\rangle, \dots, |2n\rangle$. Find the molecular orbital by performing decomposition the $2n$ -dimension Rep to irreducible ones.