1153-20-195 **Nguyen Ngoc Hung**, **A. A. Schaeffer Fry**, **Hung P. Tong-Viet** and **C. Ryan Vinroot*** (vinroot@math.wm.edu). *On the number of irreducible real-valued characters of a finite group.*

Iwasaki proposed the study of the structure of a finite group based on its number of ordinary real-valued irreducible characters. It is well-known that a finite group has a unique such character if and only if the group has odd order, and Iwasaki proved that if a finite group has exactly two such characters, then it must have a normal Sylow 2-subgroup with specific structure. Further, Moretó and Navarro studied the structure of a finite group with exactly 3 real-valued irreducible characters, and Tong-Viet studied the structure when there are 4 real-valued irreducible characters.

If G is a finite group, let $\mathrm{Sol}(G)$ denote the largest solvable normal subgroup of G. Here, we first prove that if G has at most 5 real-valued irreducible characters, then $G/\mathrm{Sol}(G)$ must be isomorphic to one group in a specific list. Further, we prove that there exists a function f from the positive integers to the positive integers such that, if G is a finite group with at most k real-valued irreducible characters, then $|G/\mathrm{Sol}(G)| \leq f(k)$. (Received August 27, 2019)