

BOUNDING THE NUMBER OF CONJUGACY CLASSES OF A FINITE GROUP

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ABSTRACT. The number $k(G)$ of conjugacy classes of a finite group G is an important group and representation theoretic invariant. It was noticed in the early twentieth century that for every positive integer k there are only finitely many groups G with $k(G) = k$. About the same time it was also proved that $k(G)$ is equal to the number of complex irreducible characters of a finite group G . We will discuss this invariant in various aspects. We will give exact formulas, lower bounds and upper bounds for $k(G)$ and will talk about some underlying representation theoretic motivations to study this function.