

ON NONSOLVABLE GROUPS WHOSE PRIME DEGREE GRAPHS HAVE FOUR VERTICES AND ONE TRIANGLE

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There is a large literature which is devoted to study the ways in which one can associate a graph with a group, for the purpose of investigating the algebraic structure using properties of the associated graph. Let G be a finite group. The prime degree graph of G , denoted by $\Delta(G)$, is an undirected graph whose vertex set is $\rho(G)$ and there is an edge between two distinct primes p and q if and only if pq divides some irreducible character degree of G . In general, it seems that the prime graphs contain many edges and thus they should have many triangles, so one of the cases that would be interesting is to consider those finite groups whose prime degree graphs have a small number of triangles. In this talk we will consider the case where for a nonsolvable group G , $\Delta(G)$ has only one triangle and four vertices.

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