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Problems and results on chromatic numbers in finite and infinite graphs. (In English)

Graph theory with applications to algorithms and computer science, Proc. 5th Int. Conf., Kalamazoo/Mich. 1984, 201-213 (1985).

[For the entire collection see Zbl 564.00004.]

In this paper some old and recent problems and results on chromatic numbers in finite and infinite graphs are discussed. For example: Let G be n-chromatic and the smallest odd circuit of which is $2k+1$. Is it then true that the number of vertices of G is greater than n^{c_k}, where c_k tends to infinity together with k? (Hajnal, Sauer and Erdős). Other authors of the problems and results quoted in this paper are El-Zahar, Baumgartner, Laver, Foreman, Shelah, Taylor, Galvin, Komjath, Rödl, Rothschild, Graham, Fan Chung, Simonovits, Toft, Dirac, Folkman, Nesetril, Szemerédi, and Lovász.

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Classification:
05C15 Chromatic theory of graphs and maps
05-02 Research monographs (combinatorics)
00A07 Problem books

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chromatic number; product of graphs; infinite chromatic number; generalized continuum hypothesis; edge critical graph