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Ramsey numbers for cycles in graphs. (In English)

J. Comb. Theory, Ser. B 14, 46-54 (1973). [0095-8956]

For two graphs G_1 and G_2, the Ramsey number $R(G_1, G_2)$ is the minimum p such that for any graph G of order p, either G_1 is a subgraph of G of G_2 is a subgraph of the complement $\bar{G}$ of G. The authors determine the Ramsey numbers in the cases where G_1 and G_2 are certain cycles. [These Ramsey numbers have since been established completely by *J. Faudree* and *R. H. Schelp* [Discrete Math. 8, 313-329 (1974; Zbl 294.05122)] and *V. Rosta* [J. Comb. Theory, Ser. B 15, 94-104, 105-120 (1973; Zbl 261.05118 and Zbl 261.05119)]. The authors show that $R(C_n, K_r) \leq nr^2$ for all r and n and that $(R(C_n, K_r) = (r-1)(n-1)+1$ if $n \geq r^2-2$. Let K_r^{t+1} denote the complete $(t+1)$-partite graph $K(r_1, \ldots, r_{t+1})$ for which $r_i = r$ for each i. Then $R(C_n, K_r^{t+1}) = t(n-1) + r$ for sufficiently large n.

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Classification:
05C35 Extremal problems (graph theory)
05C15 Chromatic theory of graphs and maps