

Zbl 249.05003

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On a generalization of Ramsey numbers. (In English)

Discrete Math. 4, 29-35 (1973). [0012-365X]

Define $m = N(l_1, k_1; l_2, k_2; r)$ as the smallest integer with the property that if the r -tuples of a set of m elements are arbitrarily split into two classes then for $i = 1$ or 2 there exists a subset of size l_i each of whose subsets of size k_i lies in some r -subset of the i -th class. $N(l_1, r; l_2; r; r)$ is the Ramsey number $N(l_1, l_2; r)$. The authors prove that if $k_1 + k_2 = r + 1$ then

$$N(l_1, k_1; l_2, k_2; r) = l_1 + l_2 - k_1 - k_2 + 1.$$

If $k_1 + 1 + k_2 = r + 2$ the authors prove

$$2^{c_1 l} < N(l_1, k_1; l_2, k_2; r) < 2^{c_2 l}.$$

Classification:

05A05 Combinatorial choice problems