Erdős, Paul; Hattingh, Johannes H.
Asymptotic bounds for irredundant Ramsey numbers. (In English)

Let $G(V, E)$ be a graph. A set of vertices $X \subseteq V$ is said to be irredundant if each vertex $x \in X$ is either an isolated vertex in the subgraph induced by X or there is vertex y in $V - X$ which is incident with x and no other vertex in X. The irredundant Ramsey number $s(m, n)$ is the smallest positive integer s so that, in every red-blue coloring of the edges of the complete graph on s vertices, either the blue graph contains an m-element irredundant set or the red graph contains an n-element irredundant set. The main result of this paper is

Theorem 1. For each $m \geq 3$ there is a positive constant C_m such that

$$s(m, n) > C_m \left(\frac{n}{\log n} \right)^{\frac{m^2 - m - 1}{2(m-1)}}.$$

J.E.Graver (Syracuse)

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