Zbl 209.28002
Erdős, Paul; Sós, V.T.
Some remarks on Ramsey's and Turán's theorem (In English)
Combinat. Theory Appl., Colloquia Math. Soc. János Bolyai 4, 395-404 (1970).

[For the entire collection see Zbl 205.00201.]
The authors prove several theorems which they call of the Ramsey-Turán type, and also several unsolved problems are posed. $f(n; k, \ell)$ is the largest integer for which there is a graph of n vertices and $f(n; k, \ell)$ edges which contains no complete subgraph of k vertices and no independent set of ℓ vertices. Trivially $f(n; 3, \ell) \leq \frac{1}{2}n\ell$. The authors prove that if $\ell = o(n)$ then $f(n; 2r + 1, \ell) = \frac{1}{2}(1-1/r)n^2(1+o(1))$. The most striking unsolved problem states: Let $\ell = o(n)$. Is it true that $f(n; 4, \ell) = o(n^2)$? Szemerédi recently showed that for $\ell = o(n)$, $f(n; 4, \ell) < (1 + o(1))n^2/8$. Several other related results are proved and there are many unsolved problems.

Classification:
05C55 Generalized Ramsey theory