

Open problem presented in Sandbjerg Manor (August 2008)

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In the following problem, for any tree T and positive integer n , by a $(T, K_{n,n})$ -free graph we mean any graph G such that neither T nor $K_{n,n}$ is an induced subgraph of G . Also $\delta(G)$ denotes the minimum degree of G .

Problem . *Let T be any tree and $n \geq 3$ an integer. Does there exists a function $f(x)$ satisfying $f(x) \rightarrow \infty$ when $x \rightarrow \infty$ such that for any $(T, K_{n,n})$ -free graph G one has $\chi(G) \geq f(\delta(G))$?*

If in the above problem we consider only $K_{n,n}$ -free graphs or T -free graphs where T is not a star graph $K_{1,t}$, then the answer is negative [1].

References

- [1] M. Zaker, On lower bounds for chromatic number, submitted.

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