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A note on α -redundant vertices in graphs. (English summary)

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Summary: “A vertex v in a graph G is said to be α -redundant if $\alpha(G - v) = \alpha(G)$, where $\alpha(G)$ stands for the stability number of G , i.e. the maximum size of a subset of pairwise nonadjacent vertices. We describe sufficient conditions for a vertex to be α -redundant in terms of some P_4 extensions. This leads to polynomial-time algorithms for solving the stable set problem giving for an arbitrary input graph either the solution of the problem or a forbidden configuration such as an induced P_5 or an induced banner in the input graph. The algorithms extend and improve a number of previous results on the problem.”

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