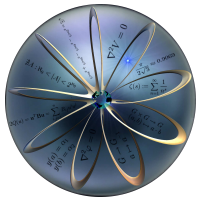

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size of maximal independent set and chromatic number

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Let $\alpha(G)$ be the size of the largest independent set in a graph G, and $\chi(G)$ the chromatic number of G.

Theorem: $\alpha(G)\chi(G) \geq |G|$.

Proof. The vertices of G can be partitioned into $\chi(G)$ monochromatic classes. Each class is an independent set, and hence cannot have size larger than $\alpha(G)$. □