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Gregory J Puleo*, puleo@illinois.edu. *Favaron's Theorem, k -dependence, and Tuza's Conjecture.*

A vertex set D in a graph G is k -dependent if $G[D]$ has maximum degree at most $k - 1$, and k -dominating if every vertex outside D has at least k neighbors in D . Favaron proved that if D is a k -dependent set maximizing the quantity $k|D| - |E(G[D])|$, then D is k -dominating. We extend this result, showing that such sets satisfy a stronger structural property, and we find a surprising connection between Favaron's theorem and a conjecture of Tuza regarding packing and covering of triangles. (Received September 22, 2015)