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On the Tightness of the 5/14 Independence Ratio.

In 1979, Staton proved that every triangle-free graph G with maximum degree at most three has an independent set with size at least $5/14$ of the number of vertices of G . Fraughnaugh (1990) and Heckman and Thomas (2001) provided shorter proofs of the same result. An analysis of the cases of equality for the main results in the last paper is presented. Also, a proof that there are only two connected triangle-free graphs with maximum degree at most three and independence ratio $5/14$ is given; it is self-contained and does not require a computer search. (Received August 09, 2007)