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A graph labelling problem of considerable interest in additive combinatorics is the minimal size of restricted difference bases of $\{0, 1, \dots, n\}$. The objective is to find the least order $k = k(n)$ of a complete graph which admits a labelling of vertices with integers in $\{0, 1, \dots, n\}$ such that every integer from 1 to n is induced on some edge as the difference between the labels on its endpoints.

Rédei and Rényi showed in 1949 that $k(n)/\sqrt{n}$ approaches a limit for large n and established a non-trivial lower bound of $\sqrt{2 + \frac{4}{3\pi}}$ on the limiting ratio. The best lower and upper bounds currently known are due to Leech and Wichmann, respectively. We obtain a slight improvement on the lower bound by refining the ideas in the original paper of Rédei and Rényi. (Received February 10, 2008)