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Kimberling's $\lfloor n^2\alpha \rfloor - n\lfloor n\alpha \rfloor$ Function,
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Abstract

Kimberling defines the function $\kappa(n) = \lfloor n^2\alpha \rfloor - n\lfloor n\alpha \rfloor$, and presents conjectures and open problems. We present three main theorems. The theorems provide quick, effectively computable, lower bounds on $\kappa(n)$ which are useful in proving that certain values do not lie in the range of κ . Our main contribution is describing the behavior of $\kappa(n)$ within an almost negligible error using the differences of the indices in the Zeckendorf representation of n . We list 4 open problems connected with κ .