LOG–CONVEXITY OF COMBINATORIAL SEQUENCES FROM THEIR CONVEXITY

Tomislav Došlić

Abstract. A sequence \((x_n)_{n \geq 0}\) of positive real numbers is log-convex if the inequality \(x_n^2 \leq x_{n-1}x_{n+1}\) is valid for all \(n \geq 1\). We show here how the problem of establishing the log-convexity of a given combinatorial sequence can be reduced to examining the ordinary convexity of related sequences. The new method is then used to prove that the sequence of Motzkin numbers is log-convex.


Keywords and phrases: Log-convexity, convexity, combinatorial sequences, Motzkin numbers.

REFERENCES