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The Fibonacci number of generalized Petersen graphs,
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Abstract

The Fibonacci number $F(G)$ of a graph G is defined as the number of independent vertex subsets of G . It was introduced in a paper of Prodinger and Tichy in 1982. There, they also ask for a formula for the Fibonacci number of a generalized Petersen graph. The aim of the current paper is to solve this problem by deriving a recursion. It will be shown that the Fibonacci number of the generalized Petersen graph with $4n + 2$ vertices is asymptotically $\alpha^{n+1/2}$, where $\alpha = 5.6709364838$ is an algebraic number of degree 5.