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Coding and counting spanning trees in Kleitman-Golden graphs. (English. Russian original)

Zbl 0766.05036

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A Kleitman-Golden graph of order n arises from the n -cycle C_n by joining every pair of vertices at distance 2 with an edge. Answering a question of *S. D. Bedrosian* [J. Franklin Inst. 295, 175-177 (1973; Zbl 0298.05104)], *D. J. Kleitman* and *B. Golden* showed that the number of spanning trees of this graph is nf_n^2 , where $(f_n)_{n \geq 1}$ is the Fibonacci sequence defined by the initial conditions $f_1 = f_2 = 1$. The paper gives another proof of this fact, based on a direct coding of spanning trees in Kleitman-Golden graphs by words in a three letter alphabet.

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MSC:

05C30 Enumeration in graph theory

05C05 Trees

11B39 Fibonacci and Lucas numbers and polynomials and generalizations

Cited in 1 Document

Keywords:

Fibonacci numbers; spanning trees; Fibonacci sequence; direct coding; Kleitman-Golden graphs; words

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