ТРУДЫ ИНСТИТУТА МАТЕМАТИКИ И МЕХАНИКИ УрО РАН

Том 22 № 1 2016

ON GRAPHS WITH VERTICES OF TWO COLORS AND GROUPS WITH 3-TRANSPOSITIONS

Received August 27, 2015

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We consider labeled undirected graphs without loops or multiple edges with vertices of two colors. A coloring of a graph Γ_n is called odd-connected if the removal of vertices of the first color produces an odd number of connected components. A general formula for the number t_n of odd-connected colorings is found for certain families of embedded graphs Γ_n. The formula depends on two parameters. In the cases where two graphs in a family can be interpreted as Coxeter graphs for certain groups with 3-transpositions, specific formulas for the numbers t_n are found.

Keywords: labeled graph, graph coloring, generating function, Coxeter graph, group with 3-transpositions.

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Cite this article as:
A. I. Sozutov, I. O. Aleksandrova. On graphs with vertices of two colors and groups with 3-transpositions, *Trudy Inst. Mat. Mekh. UrO RAN*, 2016, vol. 22, no. 1, pp. 257–262 .