α-LABELINGS OF A CLASS OF GENERALIZED PETERSEN GRAPHS

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Abstract

An α-labeling of a bipartite graph Γ of size e is an injective function
f : V(Γ) → {0, 1, 2, . . . , e} such that { |f(x) − f(y)| : [x, y] ∈ E(Γ)} =
{1, 2, . . . , e} and with the property that its maximum value on one of the two
bipartite sets does not reach its minimum on the other one. We prove that
the generalized Petersen graph P8n,3 admits an α-labeling for any integer
n ≥ 1 confirming that the conjecture posed by Vietri in [10] is true. In such
a way we obtain an infinite class of decompositions of complete graphs into
copies of P8n,3.

Keywords: generalized Petersen graph, α-labeling, graph decomposition.

2010 Mathematics Subject Classification: 05C78.

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Received 21 February 2013
Revised 13 January 2014
Accepted 29 January 2014