# HAMILTONIAN AND PANCYCLIC GRAPHS IN THE CLASS OF SELF-CENTERED GRAPHS WITH RADIUS TWO 

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#### Abstract

The paper deals with Hamiltonian and pancyclic graphs in the class of all self-centered graphs of radius 2. For both of the two considered classes of graphs we have done the following. For a given number $n$ of vertices, we have found an upper bound of the minimum size of such graphs. For $n \leq 12$ we have found the exact values of the minimum size. On the other hand, the exact value of the maximum size has been found for every $n$. Moreover, we have shown that such a graph (of order $n$ and) of size $m$ exists for every $m$ between the minimum and the maximum size. For $n \leq 10$ we have found all nonisomorphic graphs of the minimum size, and for $n=11$ only for Hamiltonian graphs.


Keywords: self-centered graph with radius 2, Hamiltonian graph, pancyclic graph, size of graph.
2010 Mathematics Subject Classification: 05C12, 05C35, 05 C 45.

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Received 17 May 2016
Revised 24 November 2016
Accepted 25 January 2017

