

EQUITABLE COLORING OF GRAPHS

HANNA FURMAŃCZYK

Faculty of Mathematics, Physics and Informatics

Institute of Informatics

University of Gdańsk

e-mail: hanna@inf.ug.edu.pl

The set of vertices of a graph G can be partitioned into k classes V_1, V_2, \dots, V_k such that each V_i is an independent set and the condition $||V_i| - |V_j|| \leq 1$ holds for every pair (i, j) , then G is said to be *equitably k -colorable*. The smallest integer k for which G is equitable k -colorable is known as the *equitable chromatic number* of G and denoted by $\chi_{=}(G)$.

This model of graph coloring has many applications. Everytime when we have to divide a system with binary conflicting relations into equal or almost equal conflict-free subsystems we can model such situation by means of equitable graph coloring.

In this paper we give new results regarding equitable coloring of some products of graphs as well as equitable coloring of corona graph for some classes of graphs.

Keywords: equitable coloring, graph products, corona graph.

AMS Subject Classification: 05C15, 68R10.