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SEMINÁRIO DE TEORIA DA COMPUTAÇÃO

ON THE COLORINGS OF GRAPHS

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Abstract

A total colouring of a graph G is a colouring of its vertices and edges such t hat no adjacent vertices, no adjacent edges, and no incident vertices and edges get the same color. Edge colouring of G is a partial case of total colouring w hen only the edges are colored. The minimum number of colours needed in each cas e is called total-chromatic number ($\chi_T(G)$) and chromatic index ($\chi'(G)$), respectively. Clearly, $\chi'(G) \geq \Delta(G)$ and $\chi_T(G) \geq \Delta(G) + 1$, where $\Delta(G)$ is the maximum degree of G . It is well known that to decide whether $\chi'(G) = \Delta(G)$ or $\chi_T(G) = \Delta(G)+1$ is NP-complete. Moreover, these problems remain NP-complete for several classes. In this talk, it will be discussed the results on the total colouring and edge colouring of some classes of graphs.

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