



Department of Mathematics and Statistics

Colloquium

Tuesday April 3

AMB 164 4:00 - 5:00 pm

On r -hued coloring of graphs

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Abstract

Abstract: In graph theory, the Four Color Theorem (some people prefer to call it conjecture) states that no more than four colors are required to color the regions of the map so that no two adjacent regions have the same color. The map color problem can be converted to the vertex coloring problem of graphs by viewing each region as a vertex, and two vertices are connected by an edge if the corresponding regions share a common boundary curve segment. A graph that is converted from a map is always a planar graph.

If we add another rule for the vertex coloring – the neighbors of a vertex have to receive at least r different colors (if the number of neighbors is no less than r), then we will need no more than 5 colors to color any planar graph when $r=2$. This coloring is called the r -hued coloring. The minimum number of colors that is needed for any planar graph when $r \geq 2$ is still open.

In this talk, the history of researches on r -hued coloring of graphs will be introduced, and some recent developments of hued colorings on graphs with certain minors will be discussed.

Refreshments at 3:45