

Equivalence, roots and uniqueness of graph colorings

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007 Kemeny Hall, 4:00 pm
(Tea 3:30 pm 300 Kemeny Hall)

Abstract

The chromatic polynomial $P(r)$ of a graph G records the number of proper vertex colorings of G with r colors. Many properties of this polynomial as well as some basic computations will be discussed. We will also ask and give some partial answers to questions such as:

1. Which polynomials are chromatic polynomials?
2. Are there examples of two different graphs with the same chromatic polynomial?
3. How do we search for infinite families of such pairs of graphs?

If time permits, we will discuss the discovery of some infinite families of the homeomorphs of the Petersen graph.