

## A Study of Chromatic Uniqueness of W14

**Authors :** Zainab Yasir Al-Rekaby, Abdul Jalil M. Khalaf

**Abstract :** Coloring the vertices of a graph such that every two adjacent vertices have different color is a very common problem in the graph theory. This is known as proper coloring of graphs. The possible number of different proper colorings on a graph with a given number of colors can be represented by a function called the chromatic polynomial. Two graphs G and H are said to be chromatically equivalent, if they share the same chromatic polynomial. A Graph G is chromatically unique, if G is isomorphic to H for any graph H such that G is chromatically equivalent to H. The study of chromatically equivalent and chromatically unique problems is called chromaticity. This paper shows that a wheel W14 is chromatically unique.

**Keywords :** chromatic polynomial, chromatically Equivalent, chromatically unique, wheel

**Conference Title :** ICEMA 2015 : International Conference on Engineering Mathematics and Applications

**Conference Location :** Paris, France

**Conference Dates :** January 23-24, 2015