Discovering factors of graph polynomials

ABSTRACT

One of the most common approaches in studying any polynomial is by looking at its factors. Over the years, different graph polynomials have been defined for both undirected and directed graphs, including the Tutte polynomial, chromatic polynomial, greedoid polynomial and cover polynomial. We consider two graph polynomials, one for undirected graphs and one for directed graphs. We first give an overview of these two polynomials. We then discuss the factors of these polynomials as well as the information that are encapsulated by these factors.

Keyword: Polynomial; Tutte polynomial; Greedoid polynomial; Directed graph; Undirected graph; Factor