

Properties and Applications of Digraphs

Overview

This project will study families of digraphs, and in particular determine families that are very strongly connected or NOT very strongly connected. We will then use these properties to analyze winning and losing positions of the combinatorial game Sylver Coinage, since all game positions can be interpreted as digraphs.

What the student(s) will DO and LEARN

The student(s) will learn background information in graph theory, with an emphasis on digraph properties. They will also learn background information on Sylver Coinage, and see how to translate game positions into digraphs, with a goal of using digraph properties to determine winning or losing strategies.

Additional Benefits

The student will learn how to prepare and give professional talks, using LaTeX to create slides in Beamer, and hopefully give presentations both on campus and at math conferences.

Time Commitment

3 hrs/week for 15 weeks