

**Abstract**

The field of combinatorial game theory, has its own set of mathematical notations and definitions by which games are assigned values, allowing for mathematical interpretations of, and operations on, these games. The goal of any game is to win. I will present my research on the mathematics behind finding a winning strategy to a combinatorial game. In doing so, I will explain what a game is, as defined in combinatorial game theory. I will also provide examples of games that have game theory applications, after the foundation of the mathematical concepts involved has been laid.