

Abstract

Zack Roder

March 2021

Combinatorial games are games of perfect information and no chance where two players take turns moving alternatively. Of particular interest are *impartial games*, a subset of combinatorial games with the added condition that the moves available to a player depend only upon the game state, not upon which player is moving (think tic-tac-toe played only with x's). Thanks to the Sprague-Grundy Theorem, we know that all games of this type can be solved by a generalization of the famous game of Nim. We intend to apply the Sprague-Grundy Theorem onto a new, non-trivial impartial game in order to classify the game's winning player and their strategy.