



Secret of Nim

It's all fun and Game Theory

Math isn't just about equations and shapes. Studying two-player games and determining which player has a **winning strategy** which cannot be defeated by the opponent is an aspect of **Game Theory**.

Here's a couple of examples. Can you figure out if **Player 1** or **Player 2** has a winning strategy?

Take One-or-Two

Setup: Place 15 tokens on the table.

Gameplay: Players alternate taking one or two tokens from the table.

Object: To take the last token from the table.

Take One-or-Two-or-Three

Same as Take One-or-Two except players can take three tokens from the table.

Nim

Setup: Place 5 tokens in 3 rows on the table.

Gameplay: Players alternate taking as many tokens as they like, as long as they are from the same row.

Object: To take the last token from the table.