

# The Theory of SET

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## **Abstract**

SET is a card game that is played with a deck of 81 cards. Each card has 4 characteristics: number, shape, shading, and color. Each characteristic has 3 options. The goal of the game is to find SETs from a random group of cards. A SET consists of 3 cards where each characteristic, individually, is either the same across all 3 cards, or all different.

The combinatorics and probabilities of other card games such as Poker and Bridge have been heavily studied. SET is still a relatively young game, and thus less of the theory is understood.

This talk will give some preliminary results of combinatoric properties of the game and a variation, PHANTOM SET. Open questions will be posed. Maybe we will solve some?