

Blackjack and Mathematics

Abstract

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This presentation will cover the game of standard blackjack abiding by the rules used in Las Vegas. The mathematical equations and standard notation will be explained in detail along with the rules that are used. Using these elements, a mathematical argument will be made to optimize a players chance of winning a given hand of blackjack. There will not be a general strategy given to winning. Instead there will be an analysis of particular situations involving the dealers hand and the players hand. This presentation discusses the combination of cards needed to win against the dealer and the probabilities of achieving those cards. This is not to be confused with card counting as there will be no examination of other players cards and it will be assumed that the cards being dealt are coming from a full deck where cards are replaced and reshuffled after every hand.