The Mathematics Of Poker
Synopsis

In the late 1970s and early 1980s, the bond and option markets were dominated by traders who had learned their craft by experience. They believed that their experience and intuition for trading were a renewable edge; this is, that they could make money just as they always had by continuing to trade as they always had. By the mid-1990s, a revolution in trading had occurred; the old school grizzled traders had been replaced by a new breed of quantitative analysts, applying mathematics to the "art" of trading and making of it a science. Similarly in poker, for decades, the highest level of pokers have been dominated by players who have learned the game by playing it, "road gamblers" who have cultivated intuition for the game and are adept at reading other players' hands from betting patterns and physical tells. Over the last five to ten years, a whole new breed has risen to prominence within the poker community. Applying the tools of computer science and mathematics to poker and sharing the information across the Internet, these players have challenged many of the assumptions that underlie traditional approaches to the game. One of the most important features of this new approach is a reliance on quantitative analysis and the application of mathematics to the game. The intent of this book is to provide an introduction to quantitative techniques as applied to poker and to a branch of mathematics that is particularly applicable to poker, game theory. There are mathematical techniques that can be applied for poker that are difficult and complex. But most of the mathematics of poker is really not terribly difficult, and the authors have sought to make seemingly difficult topics accessible to players without a very strong mathematical background.

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Customer Reviews
Wow, I’m very impressed with the book. I think it’s touched ground that isn’t available anywhere else. I’m sure that many programmers (myself included) have attempted to solve this game, and have discovered how burdensome the simple odds calculations are, nevermind the strategy and decision trees. Poker will not soon be solved by computers, like chess is. However, Bill Chen’s ideas of “Toy games” help humans get insight into the character of the solution. Anyone picking up this text should be warned of several things: 1) It is not for beginners. Strong poker takes judgement and experience, and basic hand/situational values can be best learned from Dan Harrington’s books or Sklansky’s No-Limit book. I’ve read over 20 poker books, and Harrington and Sklansky stand out as the best. Harrington’s books are very practical, with detailed analysis of situations. 2) It is not for the timid, foggy headed, or undisciplined. The new concepts in his books require for you to stop and think. If your instinct is “gee, this sounds complicated”, then give up now. Some people will have the same backlash that regular people have with math. If you’re from the “Math is hard” philosophy, this is not for you. 3) This book does not read fast. You should read it 3 times slower than a normal book to really appreciate it. The math should not just be understood, it should be questioned. 4) The book highlights theory behind game strategy, but does not connect the dots with real hands or real situations. It would be good to connect the check-call, check-raise, check-fold, bet-raise, bet-call, bet-fold, bluff, check-raise bluff, etc... thresholds with actual cards.

I just finished my first complete reading of the book. It is absolutely extraordinary. Those looking for specific advice playing particular forms of poker will not be happy with the book (with one important, and possibly extremely profitable exception). Those who are looking to really understand the depths and complexity of the game, in all its forms, will be rewarded with an absolute masterpiece. I am a professional poker player, and I’ve read and studied everything worth reading (and many others not worth reading!) about poker many times. In my opinion, nearly all of the worthwhile stuff is 2+2 books, with a few important exceptions. As stellar as I believe the 2+2 books are, I feel that Mathematics of Poker (MoP) deserves its own category. Its major departure from most good poker books is to explore the notion of “optimal play” in a great deal of depth. The most powerful tool of this exploration is game theory, and the book contains an extremely rigorous application of game theory to poker using exemplifying “toy” games that illustrate strategic principles of real poker games. Except for what Sklansky has briefly written on the subject (Theory of Poker), this is the only book containing this kind of information that I am aware of. While the game theory sections seem to be causing the most comments, MoP also contains excellent sections on what the authors call “exploitive play”. While optimal play intends to make our own play unexploitable, exploitive play
intends to maximally profit from the deficiencies in our opponent's strategies. To do so, we must ourselves deviate from optimal play, which opens us up to be exploited ourselves (what the authors call counter-exploitation).

Bill Chen and Jerrod Ankenman, The Mathematics of Poker (ConJelCo, 2006) I should start this review by saying I'm not a math guy. I never was. I failed calculus the first time and had to take it twice (I squeaked by with a C- the second time). Years as a horseplayer, though, made me understand that I was a stats guy, and that the math inherent to the stats was workable even for an English major like me. Then I started playing poker seriously. Probability? Kelly criterion? Game theory? Yeah, I had all that. Then I read The Mathematics of Poker. And there's my old nemesis... calculus. Chen and Ankenman say in the intro that the book is geared towards laypeople, and that they try to keep the math to a minimum (they separate out the more complex proofs and the like for non-math-guys to skip over). In short, they don't succeed. They can't; in order for you to grasp concepts later in the book, you have to get the math earlier in the book. There's no way to keep it to a minimum, really. There might be a way to make it more palatable, though. I've read probably seven or eight books on horse racing for every poker book I've read. (I was a horseplayer for a decade before I started playing poker with real, honest-to-goodness money.) One thing many of the good ones have in common is that they err on the side of excess when it comes to examples. If there's tricky math involved, the author will take you through it with four or five examples. When you're reading a book on horse racing, sometimes it seems like overkill, and I know I've remarked on that in some reviews of horse books I've written. I am now reformed, and see the light. Had I had that many redundant examples here, I'd probably have gotten it.

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