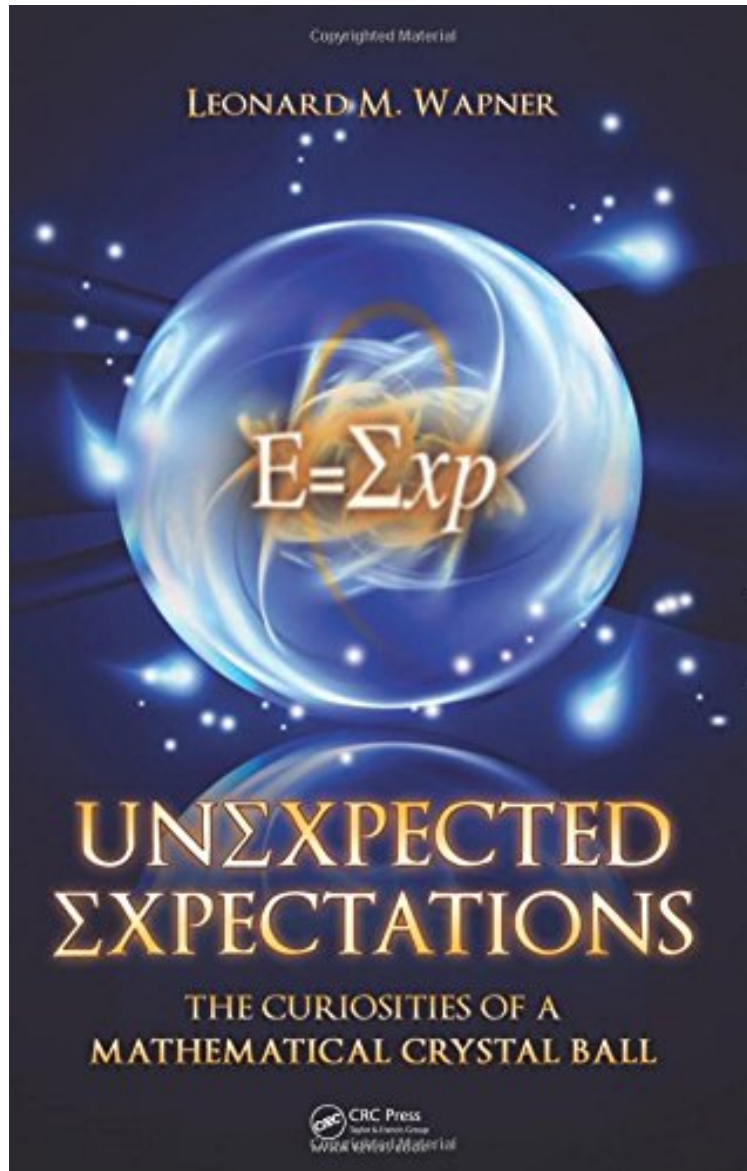


(Download) Unexpected Expectations: The Curiosities of a Mathematical Crystal Ball

Unexpected Expectations: The Curiosities of a Mathematical Crystal Ball

Leonard M. Wapner

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Leonard M. Wapner : Unexpected Expectations: The Curiosities of a Mathematical Crystal Ball before purchasing it in order to gage whether or not it would be worth my time, and all praised Unexpected Expectations: The Curiosities of a Mathematical Crystal Ball:

0 of 0 people found the following review helpful. Travels through mathematical expectationBy David J. AldousThe

first 3 chapters give a good concise introduction to the basic mathematics of probability using standard examples, centered on the idea that the "rational" way to think about situations of uncertainty is in terms of the expectation of payoff. The fourth chapter concerns the "predictable irrationality" of actual human behavior -- loss aversion and inequality aversion -- as popularized by *Thinking, Fast and Slow*, and the eighth chapter concerns Prisoners' Dilemma type game theory. Most of the remaining material -- Chapters 5-7 and 9 -- involves paradoxes such as the "two envelope" and "sleeping beauty" problems, and Newcomb's paradox. Such contrived hypothetical scenarios exert a continued fascination on people more interested in logic puzzles than in typical real-world instances of uncertainty, though my view is that attempting to make them more realistic is either impossible, or makes the paradox disappear. Overall, the type of material in this book is familiar from many other non-technical books on Probability, though the style is somewhat more mathematical than most -- "textbook lite" rather than easy bedside reading. The game theory chapter has some unusually sophisticated discussion, and in general the concise style enables the author to include an unusually large number of mathematical examples. I would recommend it to an intending college math major interested in the logic of probability or decisions under uncertainty, but not as providing a useful big picture for the more casual reader.

1 of 1 people found the following review helpful. Math for the non-math person
 By F. B. Rang
 Have to think, yes. But presented clearly. Math concepts of "puzzles" that actually are fun to struggle with. Some worth going over several times even after you have followed reasoning. Often have real life applications. I am a language teacher not a math person but found the language a key to understanding the problem.

1 of 2 people found the following review helpful. From historical perspective - interesting, from math perspective not
 By I. Kleiner
 First of all, it is a problem to use this book on android phones. It's impossible to open this book
 Second thing, I expect to book full of interesting examples and unordinary usings of estimation as in a book of Mossteller 50 problems of probability or as in the wonderful book : "The probability snapshots" ...But not, the book has plenty of historic materials and a little of interesting examples

Unexpected Expectations: The Curiosities of a Mathematical Crystal Ball explores how paradoxical challenges involving mathematical expectation often necessitate a reexamination of basic premises. The author takes you through mathematical paradoxes associated with seemingly straightforward applications of mathematical expectation and shows how these unexpected contradictions may push you to reconsider the legitimacy of the applications. The book requires only an understanding of basic algebraic operations and includes supplemental mathematical background in chapter appendices. After a history of probability theory, it introduces the basic laws of probability as well as the definition and applications of mathematical expectation/expected value (E). The remainder of the text covers unexpected results related to mathematical expectation, including: The roles of aversion and risk in rational decision making A class of expected value paradoxes referred to as envelope problems Parrondos paradox how negative (losing) expectations can be combined to give a winning result Problems associated with imperfect recall Non-zero-sum games, such as the game of chicken and the prisoners dilemma Newcombs paradoxa great philosophical paradox of free will Benfords law and its use in computer design and fraud detection While useful in areas as diverse as game theory, quantum mechanics, and forensic science, mathematical expectation generates paradoxes that frequently leave questions unanswered yet reveal interesting surprises. Encouraging you to embrace the mysteries of mathematics, this book helps you appreciate the applications of mathematical expectation, "a statistical crystal ball." Listen to an interview with the author on NewBooksInMath.com.

"Apart from its general interest, this book contains much material which would be suitable for presentation to students at many levels of achievement. When full details are not included, there are adequate references to the literature, and there is a good balance between mathematics and qualitative description." Peter Giblin, *The Mathematical Gazette*, March 2014 "the book is highly recommended as Leonard Wapner has a great writing style that both comforts and challenges the reader in the world of confusing paradoxes. Most of the content was new to me, yet it was enjoyable and helped un-solidify my belief in mathematical expectations. Get the book and read it if you enjoy being puzzled and discovering new things about what you thought you understood!" MathNEXUS, March 2014 "Expectation is an extension of the idea of average value, and is a basic tool of probability theory that underlies both the gaming and insurance industries. Unexpected Expectations is a fascinating look at some of the counterintuitive aspects of this apparently simple concept." Jim Stein, NewBooksInMath.com, May 2013 "Every reader unless they are encyclopedic consumers of all things related to mathematical expectation both in technical journals and the popular press will find illuminating discussions of paradoxical probabilities that are new to them." Andrew James Simoson, *Mathematical s*, January 2013 " the thrust of the book is to illustrate the myriad of applications of the simple formula for expected value, independent of the mathematical justification that underlies them. At this, Unexpected Expectations is a success. an excellent contribution to popular mathematics writing." Mark Bollman, *MAA s*, July 2012