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The Pleasures Of Probability (Undergraduate Texts In Mathematics)





Synopsis

The ideas of probability are all around us. Lotteries, casino gambling, the alÂ- most non-stop polling which seems to mold public policy more and moreÂ- these are a few of the areas where principles of probability impinge in a direct way on the lives and fortunes of the general public. At a more reÂ-moved level there is modern science which uses probability and its offshoots like statistics and the theory of random processes to build mathematical descriptions of the real world. In fact, twentieth-century physics, in embracÂ- ing quantum mechanics, has a world view that is at its core probabilistic in nature, contrary to the deterministic one of classical physics. In addition to all this muscular evidence of the importance of probability ideas it should also be said that probability can be lots of fun. It is a subject where you can start thinking about amusing, interesting, and often difficult problems with very little mathematical background. In this book, I wanted to introduce a reader with at least a fairly decent mathematical background in elementary algebra to this world of probability can be applied. I have used examples from a wide variety of fields to motivate the discussion of concepts.

Book Information

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Customer Reviews

Professor Isaac has written a book for those interested in learning about probability. It is at a high school algebra level although knowledge of calculus could be helpful at times. He starts with the

now famous Monte Hall problem and provides the most lucid explanation I have seen to date. This is a great way to introduce important probability notions such as sample space and probability models for the sample outcomes. Deals mainly with discrete probability which is easiest to understand and yet rich with applications in gambling and other areas. Important theory is presented but without the detailed mathematical proofs. Covers the gambler's ruin, geometric probability, Monte Carlo methods and some statistical decision theory. He also presents both the frequentist (throughout the text) and the Bayesian paradigms (Chapter 4) for statistical inference. Examples of the application of probability to statistical inference is nicely treated in Chapter 15. The deeper material on Markov chains and Brownian motion are relegated to the last two chapters (16 and 17). The exposition is excellent throughout and many good references are provided for readers who want to learn more or delve deeper into the theory.

This introduction to probability and statistics teaches you about important concepts, theorems and applications without going into proving most of them. It's easily accessible to amateur mathematicians with a bit of persistance, and it illuminates many of its concepts using famous problems. I'm going to take a statistics course next year, and I found this to be a delightful introduction to the topic.

This is a wonderful book for both the serious and amateur mathematician. For the serious student and practitioner it will provide an excellent background. For the amateur who enjoy dabbling and reading about math, this is a wonderful book - just read the opening section which explains clearly and an illustrated fashion the Monty Hall problem.

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