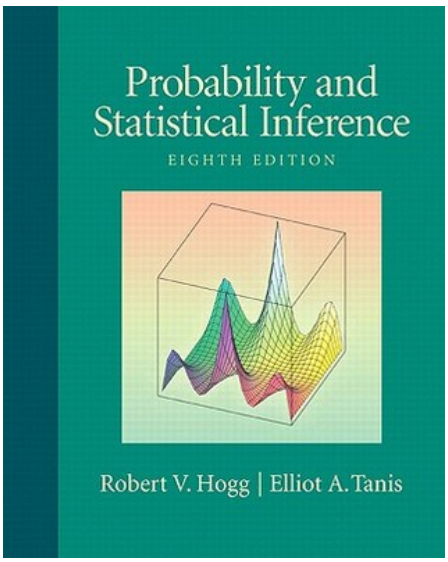

Probability and Statistical Inference

Robert V. Hogg , Elliot Tanis

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BOOK DESCRIPTION: Written by two leading statisticians, this applied introduction to the mathematics of probability and statistics emphasizes the existence of variation in almost every process, and how the study of probability and statistics helps us understand this variation. Designed for students with a background in calculus, this book continues to reinforce basic mathematical concepts with numerous real-world examples and applications to illustrate the relevance of key concepts. NEW TO THIS EDITION:
The included CD-ROM contains all of the data sets in a variety of formats for use with most statistical software packages. This disc also includes several applications of Minitab(R) and Maple(TM).
Historical vignettes at the end of each chapter outline the origin of the greatest accomplishments in the field of statistics, adding enrichment to the course.
Content updates
The first five chapters have been reorganized to cover a standard probability course with more real examples and exercises. These chapters are important for students wishing to pass the first actuarial exam, and cover the necessary material needed for students taking this course at the junior level.
Chapters 6 and 7 on estimation and tests of statistical hypotheses tie together confidence intervals and tests, including one-sided ones. There are separate chapters on nonparametric methods, Bayesian methods, and Quality Improvement.
Chapters 4 and 5 include a strong discussion on conditional distributions and functions of random variables, including Jacobians of transformations and the moment-generating technique. Approximations of distributions like the binomial and the Poisson with the normal can be found using the central limit theorem.
Chapter 8 (Nonparametric Methods) includes most of the standards tests such as those by Wilcoxon and also the use of order statistics in some distribution-free inferences.
Chapter 9 (Bayesian Methods) explains the use of the "Dutch book" to prove certain probability theorems.
Chapter 11 (Quality Improvement) stresses how important W. Edwards Deming's ideas are in understanding variation and how they apply to everyday life.
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From Reader Review Probability and Statistical Inference for online ebook

Anna Kander says

I'm reading the 4th edition, from 1993.

Adam says

The prose is clear, the examples are valuable, the development is very quick to arrive at useful results. I find it walks a very satisfying balance between theory and application, giving proofs everywhere, and only where, the value of seeing the proof outweighs the time required to understand it. It and its associated Introduction to Mathematical Statistics are classics for a good reason.

However, as a classic, it is missing some more modern topics like survival functions.

Steve Stuart says

This is a very solid textbook on probability and statistics, from the introductory level through intermediate topics, and is reasonable as a reference text as well. The text tends to be dry, rather than chatty, and the topics are developed from scratch or described with proofs, rather than simply being presented as definitions. I consider these to be positive features, in a math text. The examples don't tend to be very interesting, but there are a large number of them, which helps when using this book as a student.

I used the second edition of this book in college. Despite having a large selection of newer, more comprehensive, or more advanced books on my shelf to choose from, Hogg & Tanis is still the book I normally turn to when I need to look up a distribution or statistical test.

Bill says

I think this is a great introduction to statistics. There are a lot of well-thought of books which are complete nonsense. It was refreshing to find a book which is both accessible and rigorous.

I'm actually reading the 4th edition, not the 6th. It was really cheap on Alibris, and how much does statistics change, anyway?
