Nonstandard Analysis for the Working Mathematician

From Ingramcontent

Nonstandard Analysis for the Working Mathematician From Ingramcontent

This book is addressed to mathematicians working in analysis and its applications. The aim is to provide an understandable introduction to the basic theory of nonstan dard analysis in Part I, and then to illuminate some of its most striking applications. Much of the book, in particular Part I, can be used in a graduate course; problems are posed in all chapters. After Part I, each chapter takes up a different field for the application of nonstandard analysis, beginning with a gentle introduction that even non-experts can read with profit. The remainder of each chapter is then addressed to experts, showing how to use nonstandard analysis in the search for solutions of open problems and how to obtain rich new structures that produce deep insight into the field under consideration. The applications discussed here are in functional analysis including operator theory, probability theory including stochastic processes, and economics including game theory and financial mathematics. In all of these areas, the intuitive notion of an infinitely small or infinitely large quantity plays an essential and helpful role in the creative process. For example, Brownian motion is often thought of as a random walk with infinitesimal increments; the spectrum of a selfadjoint operator is viewed as the set of "almost eigenvalues"; an ideal economy consists of an infinite number of agents each having an infinitesimal influence on the economy. Already at the level of calculus, one often views the integral as an infinitely large sum of infinitesimal quantities.

[Download](#) Nonstandard Analysis for the Working Mathematician ...pdf

[Read Online](#) Nonstandard Analysis for the Working Mathematici ...pdf

Nonstandard Analysis for the Working Mathematician

From Ingramcontent

Nonstandard Analysis for the Working Mathematician From Ingramcontent

This book is addressed to mathematicians working in analysis and its applications. The aim is to provide an understandable introduction to the basic theory of nonstan dard analysis in Part I, and then to illuminate some of its most striking applications. Much of the book, in particular Part I, can be used in a graduate course; problems are posed in all chapters. After Part I, each chapter takes up a different field for the application of nonstandard analysis, beginning with a gentle introduction that even non-experts can read with profit. The remainder of each chapter is then addressed to experts, showing how to use nonstandard analysis in the search for solutions of open problems and how to obtain rich new structures that produce deep insight into the field under consideration. The applications discussed here are in functional analysis including operator theory, probability theory including stochastic processes, and economics including game theory and financial mathematics. In all of these areas, the intuitive notion of an infinitely small or infinitely large quantity plays an essential and helpful role in the creative process. For example, Brownian motion is often thought of as a random walk with infinitesimal increments; the spectrum of a selfadjoint operator is viewed as the set of "almost eigenvalues"; an ideal economy consists of an infinite number of agents each having an infinitesimal influence on the economy. Already at the level of calculus, one often views the integral as an infinitely large sum of infinitesimal quantities.

Nonstandard Analysis for the Working Mathematician From Ingramcontent Bibliography

- Brand: Ingramcontent
- Published on: 2016-11-11
- Released on: 2016-11-11
- Original language: English
- Dimensions: 9.25" h x 1.13" w x 6.10" l,
- Binding: Paperback
- 500 pages

Editorial Review

From the Back Cover

Starting with a simple formulation accessible to all mathematicians, this second edition is designed to provide a thorough introduction to nonstandard analysis. Nonstandard analysis is now a well-developed, powerful instrument for solving open problems in almost all disciplines of mathematics; it is often used as a secret weapon by those who know the technique.

This book illuminates the subject with some of the most striking applications in analysis, topology, functional analysis, probability and stochastic analysis, as well as applications in economics and combinatorial number theory. The first chapter is designed to facilitate the beginner in learning this technique by starting with calculus and basic real analysis. The second chapter provides the reader with the most important tools of nonstandard analysis: the transfer principle, Keisler s internal definition principle, the spill-over principle, and saturation. The remaining chapters of the book study different fields for applications; each begins with a gentle introduction before then exploring solutions to open problems.

All chapters within this second edition have been reworked and updated, with several completely new chapters on compactifications and number theory. "Nonstandard Analysis for the Working Mathematician" will be accessible to both experts and non-experts, and will ultimately provide many new and helpful insights into the enterprise of mathematics."

Users Review

From reader reviews:

Dora Vazquez:

Hey guys, do you wishes to finds a new book you just read? May be the book with the headline Nonstandard Analysis for the Working Mathematician suitable to you? Often the book was written by well known writer in this era. The actual book untitled Nonstandard Analysis for the Working Mathematicianis the main of several books that everyone read now. This specific book was inspired many men and women in the world. When you read this publication you will enter the new dimension that you ever know before. The author explained their plan in the simple way, consequently all of people can easily to know the core of this reserve. This book will give you a lots of information about this world now. To help you to see the represented of the world within this book.

Clifford Jones:

Reading a e-book tends to be new life style in this era globalization. With reading you can get a lot of information which will give you benefit in your life. Using book everyone in this world can certainly share their idea. Books can also inspire a lot of people. Lots of author can inspire their own reader with their story or perhaps their experience. Not only the story that share in the textbooks. But also they write about the ability about something that you need instance. How to get the good score toefl, or how to teach your kids, there are many kinds of book that exist now. The authors on earth always try to improve their ability in

writing, they also doing some research before they write on their book. One of them is this Nonstandard Analysis for the Working Mathematician.

Amado Spieker:

Reading can called head hangout, why? Because if you are reading a book mainly book entitled Nonstandard Analysis for the Working Mathematician your mind will drift away trough every dimension, wandering in most aspect that maybe unfamiliar for but surely might be your mind friends. Imaging every single word written in a publication then become one type conclusion and explanation this maybe you never get before. The Nonstandard Analysis for the Working Mathematician giving you one more experience more than blown away your head but also giving you useful facts for your better life on this era. So now let us show you the relaxing pattern is your body and mind is going to be pleased when you are finished reading through it, like winning an activity. Do you want to try this extraordinary paying spare time activity?

Amanda Lara:

Your reading sixth sense will not betray you actually, why because this Nonstandard Analysis for the Working Mathematician book written by well-known writer whose to say well how to make book which can be understand by anyone who have read the book. Written within good manner for you, still dripping wet every ideas and writing skill only for eliminate your current hunger then you still uncertainty Nonstandard Analysis for the Working Mathematician as good book not only by the cover but also by the content. This is one e-book that can break don't judge book by its deal with, so do you still needing an additional sixth sense to pick this!? Oh come on your looking at sixth sense already said so why you have to listening to another sixth sense.

Download and Read Online Nonstandard Analysis for the Working Mathematician From Ingramcontent #2YFKPIULB8W

Read Nonstandard Analysis for the Working Mathematician From Ingramcontent for online ebook

Nonstandard Analysis for the Working Mathematician From Ingramcontent Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Nonstandard Analysis for the Working Mathematician From Ingramcontent books to read online.

Online Nonstandard Analysis for the Working Mathematician From Ingramcontent ebook PDF download

Nonstandard Analysis for the Working Mathematician From Ingramcontent Doc

Nonstandard Analysis for the Working Mathematician From Ingramcontent Mobipocket

Nonstandard Analysis for the Working Mathematician From Ingramcontent EPub

2YFKPIULB8W: Nonstandard Analysis for the Working Mathematician From Ingramcontent