

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory

By Carl M. Bender, Steven A. Orszag

Download Read Online

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag

A clear, practical and self-contained presentation of the methods of asymptotics and perturbation theory for obtaining approximate analytical solutions to differential and difference equations. Aimed at teaching the most useful insights in approaching new problems, the text avoids special methods and tricks that only work for particular problems. Intended for graduates and advanced undergraduates, it assumes only a limited familiarity with differential equations and complex variables. The presentation begins with a review of differential and difference equations, then develops local asymptotic methods for such equations, and explains perturbation and summation theory before concluding with an exposition of global asymptotic methods. Emphasizing applications, the discussion stresses care rather than rigor and relies on many well-chosen examples to teach readers how an applied mathematician tackles problems. There are 190 computer-generated plots and tables comparing approximate and exact solutions, over 600 problems of varying levels of difficulty, and an appendix summarizing the properties of special functions.

Download Advanced Mathematical Methods for Scientists and E ...pdf

Read Online Advanced Mathematical Methods for Scientists and ...pdf

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory

By Carl M. Bender, Steven A. Orszag

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag

A clear, practical and self-contained presentation of the methods of asymptotics and perturbation theory for obtaining approximate analytical solutions to differential and difference equations. Aimed at teaching the most useful insights in approaching new problems, the text avoids special methods and tricks that only work for particular problems. Intended for graduates and advanced undergraduates, it assumes only a limited familiarity with differential equations and complex variables. The presentation begins with a review of differential and difference equations, then develops local asymptotic methods for such equations, and explains perturbation and summation theory before concluding with an exposition of global asymptotic methods. Emphasizing applications, the discussion stresses care rather than rigor and relies on many well-chosen examples to teach readers how an applied mathematician tackles problems. There are 190 computer-generated plots and tables comparing approximate and exact solutions, over 600 problems of varying levels of difficulty, and an appendix summarizing the properties of special functions.

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag Bibliography

- Sales Rank: #48729 in Books
- Brand: Springer
- Published on: 1999-10-29
- Original language: English
- Number of items: 1
- Dimensions: 9.21" h x 1.44" w x 6.14" l, 2.11 pounds
- Binding: Hardcover
- 593 pages

Download Advanced Mathematical Methods for Scientists and E ...pdf

Read Online Advanced Mathematical Methods for Scientists and ...pdf

Download and Read Free Online Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag

Editorial Review

Review

"This book is a reprint of the original published by McGraw-Hill ef [MR0538168 (80d:00030)]. The only changes are the addition of the Roman numeral I to the title and the provision of a subtitle, "Asymptotic methods and perturbation theory". This latter improvement is much needed, as the original title suggested that this was a teaching book for undergraduate scientists and engineers. It is not, but is an excellent introduction to asymptotic and perturbation methods for master's degree students or beginning research students. Certain parts of it could be used for a course in asymptotics for final year undergraduates in applied mathematics or mathematical physics.

This is a book that has stood the test of time and I cannot but endorse the remarks of the original reviewer. It is written in a fresh and lively style and the many graphs and tables, comparing the results of exact and approximate methods, were in advance of its time. I have owned a copy of the original for over twenty years, using it on a regular basis, and, after the original had gone out of print, lending it to my research students. Springer-Verlag has done a great service to users of, and researchers in, asymptotics and perturbation theory by reprinting this classic." (A.D. Wood, Mathematical Reviews)

Users Review

From reader reviews:

John Burns:

What do you with regards to book? It is not important to you? Or just adding material if you want something to explain what you problem? How about your spare time? Or are you busy man? If you don't have spare time to try and do others business, it is make you feel bored faster. And you have extra time? What did you do? Everyone has many questions above. They have to answer that question simply because just their can do this. It said that about book. Book is familiar on every person. Yes, it is suitable. Because start from on pre-school until university need this specific Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory to read.

Errol Garvin:

The book with title Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory contains a lot of information that you can study it. You can get a lot of benefit after read this book. This kind of book exist new know-how the information that exist in this e-book represented the condition of the world right now. That is important to yo7u to know how the improvement of the world. This particular book will bring you inside new era of the the positive effect. You can read the e-book on your smart phone, so you can read it anywhere you want.

John Hawkins:

Playing with family inside a park, coming to see the coastal world or hanging out with close friends is thing that usually you will have done when you have spare time, after that why you don't try point that really opposite from that. Just one activity that make you not experiencing tired but still relaxing, trilling like on roller coaster you already been ride on and with addition of information. Even you love Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory, you could enjoy both. It is very good combination right, you still would like to miss it? What kind of hang-out type is it? Oh occur its mind hangout fellas. What? Still don't buy it, oh come on its called reading friends.

Jack Rolfes:

E-book is one of source of understanding. We can add our understanding from it. Not only for students but also native or citizen require book to know the upgrade information of year to year. As we know those ebooks have many advantages. Beside most of us add our knowledge, can bring us to around the world. From the book Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory we can acquire more advantage. Don't you to definitely be creative people? To get creative person must prefer to read a book. Merely choose the best book that acceptable with your aim. Don't become doubt to change your life with this book Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory. You can more pleasing than now.

Download and Read Online Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag #SIJ0MO1BKP4

Read Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag for online ebook

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag 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 Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag books to read online.

Online Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag ebook PDF download

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag Doc

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag Mobipocket

Advanced Mathematical Methods for Scientists and Engineers: Asymptotic Methods and Perturbation Theory By Carl M. Bender, Steven A. Orszag EPub