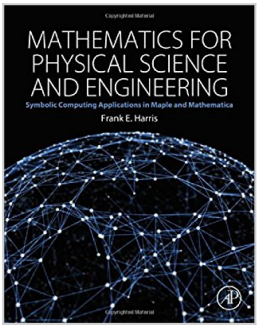

Mathematics for Physical Science and Engineering: Symbolic Computing Applications in Maple and Mathematica

By Frank E. Harris

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Mathematics for Physical Science and Engineering is a complete text in mathematics for physical science that includes the use of symbolic computation to illustrate the mathematical concepts and enable the solution of a broader range of practical problems. This book enables professionals to connect their knowledge of mathematics to either or both of the symbolic languages Maple and Mathematica.

The book begins by introducing the reader to symbolic computation and how it can be applied to solve a broad range of practical problems. Chapters cover topics that include: infinite series; complex numbers and functions; vectors and matrices; vector analysis; tensor analysis; ordinary differential equations; general vector spaces; Fourier series; partial differential equations; complex variable theory; and probability and statistics. Each important concept is clarified to students through the use of a simple example and often an illustration.

This book is an ideal reference for upper level undergraduates in physical chemistry, physics, engineering, and advanced/applied mathematics courses. It will also appeal to graduate physicists, engineers and related specialties seeking to address practical problems in physical science.

- Clarifies each important concept to students through the use of a simple example and often an illustration
- Provides quick-reference for students through multiple appendices, including an overview of terms in most commonly used applications (Mathematica, Maple)
- Shows how symbolic computing enables solving a broad range of practical problems

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Editorial Review

Review

"...a remarkably clear and impressively well-balanced introduction to mathematical methods for physicists and engineers…it does a very good job of picking the most important techniques."--**MAA.org, Aug-15**

"...designed to clarify and optimize the efficiency of the student's acquisition of mathematical understanding and skill and...provide students with a mathematical toolbox that will rapidly become of routine use in a scientific or engineering career."--***Zentralblatt MATH,* Sep-14**

From the Back Cover
Mathematics for Physical Science and Engineering opens with an introduction to symbolic computing at a level designed to be accessible to an audience that is intellectually ready to study detailed mathematics but which knows little or nothing about symbolic computing or the languages that support it. Since the symbolic computing language available to students will often be chosen by the instructor and may depend upon various practical issues, the book provides parallel support for both MAPLE and MATHEMATICA, the two languages with the most capability and the greatest availability. The aim of the text is to clarify and optimize the efficiency of the student's acquisition of mathematical understanding and skill and to provide students with a mathematical toolbox that will rapidly become of routine use in a scientific or engineering career.

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