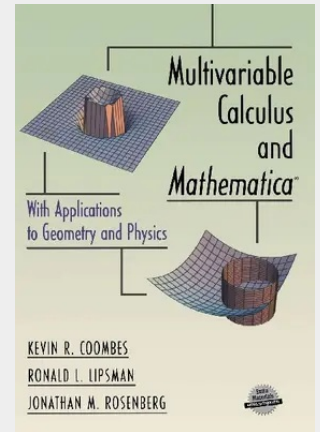


Multivariable Calculus and Mathematica®

With Applications to Geometry and Physics

One of the authors' stated goals for this publication is to "modernize" the course through the integration of Mathematica. Besides introducing students to the multivariable uses of Mathematica, and instructing them on how to use it as a tool in simplifying calculations, they also present introductions to geometry, mathematical physics, and kinematics, topics of particular interest to engineering and physical science students. In using Mathematica as a tool, the authors take pains not to use it simply to define things as a whole bunch of new "gadgets" streamlined to the taste of the authors, but rather they exploit the tremendous resources built into the program. They also make it clear that Mathematica is not algorithms. At the same time, they clearly see the ways in which Mathematica can make things cleaner, clearer and simpler. The problem sets give students an opportunity to practice their newly learned skills, covering simple calculations with Mathematica, simple plots, a review of one-variable calculus using Mathematica for symbolic differentiation, integration and numerical integration. They also cover the practice of incorporating text and headings into a Mathematica notebook. A DOS-formatted diskette accompanies the printed work, containing both Mathematica 2.2 and 3.0 version notebooks, as well as sample examination problems for students. This supplementary work can be used with any standard multivariable calculus textbook. It is assumed that in most cases students will also have access to an introductory primer for Mathematica.

One of the authors' stated goals for this publication is to "modernize" the course through the integration of Mathematica. Besides introducing students to the multivariable uses of Mathematica, and instructing them on how to use it as a tool in simplifying calculations, they also present introductions to geometry, mathematical physics, and kinematics, topics of particular interest to engineering and physical science students. In using Mathematica as a tool, the authors take pains not to use it simply to define things as a whole bunch of new "gadgets" streamlined to the taste of the authors, but rather they exploit the tremendous resources built into the program. They also make it clear that Mathematica is not algorithms. At the same time, they clearly see the ways in which Mathematica can make things cleaner, clearer and simpler. The problem sets give students an opportunity to practice their newly learned skills, covering simple calculations with Mathematica, simple plots, a review of one-variable calculus using Mathematica for symbolic differentiation, integration and numerical integration. They also cover the practice of incorporating text and headings into a Mathematica notebook. A DOS-formatted diskette accompanies the printed work, containing both Mathematica 2.2 and 3.0 version notebooks, as well as sample examination problems for students. This supplementary work can be used with any standard multivariable calculus textbook. It is assumed that in most cases students will also have access to an introductory primer for Mathematica.



50,24 €

46,95 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780387983608

Medium: Buch

ISBN: 978-0-387-98360-8

Verlag: Humana

Erscheinungstermin: 15.05.1998

Sprache(n): Englisch

Auflage: Softcover Nachdruck of the original 1. Auflage 1998

Produktform: Kartoniert

Gewicht: 522 g

Seiten: 283

Format (B x H): 170 x 244 mm

