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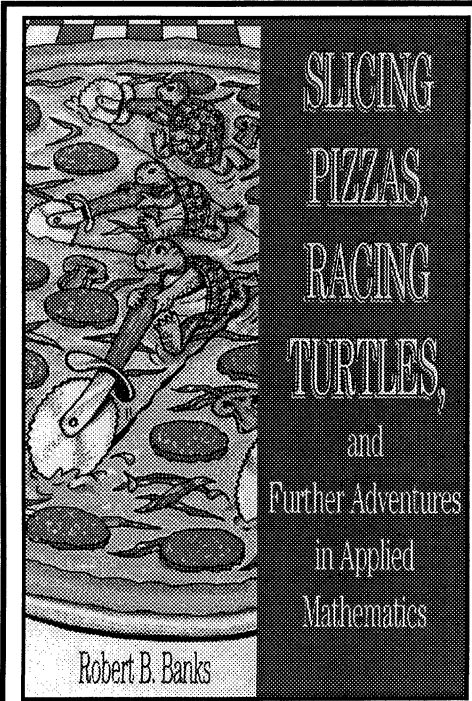
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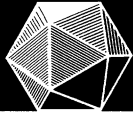
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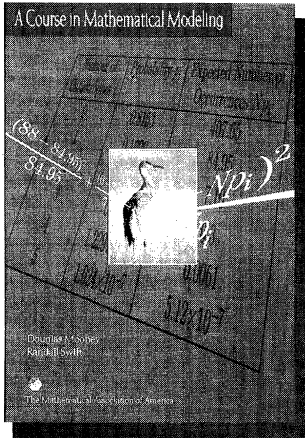
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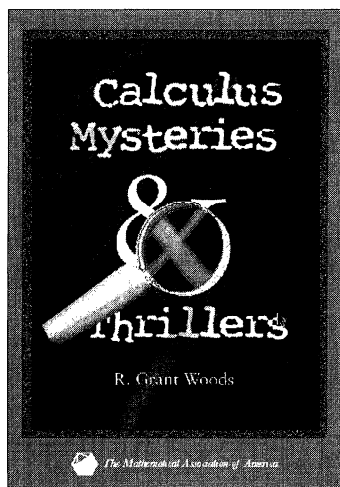
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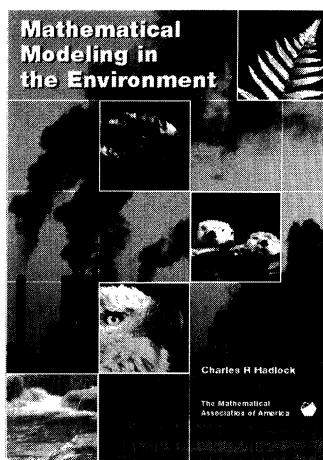
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ence, or engineering course could move quickly to Part 2.

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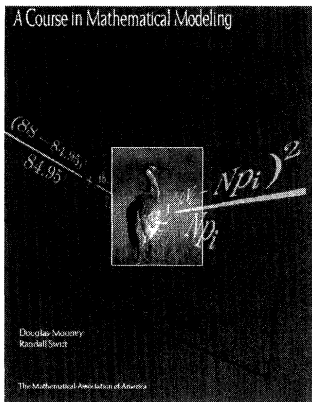
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The authors emphasize the teaching of the modeling process as opposed to merely presenting models. They begin their book with the simple discrete exponential growth model, and successively refine it to include variable growth rates, multiple variables, growth rates fitted to data, and the effects of random factors. The last part of the book moves into continuous-time models. Issues of model validity and purpose are emphasized throughout.

Students taking a course based on this book should have some mathematical maturity, but will need little advanced knowledge. The book presents more advanced topics on an as-needed basis and serves

to show how the different topics of undergraduate mathematics can be used together to solve problems. This perspective is valuable as either a road map for beginning students or as a capstone for more advanced students. The course presents elements of discrete dynamical systems, basic probability theory, differential equations, matrix algebra, stochastic processes, curve fitting, statistical testing, and regression analysis. Computer analysis is extensively used in conjunction with these topics.

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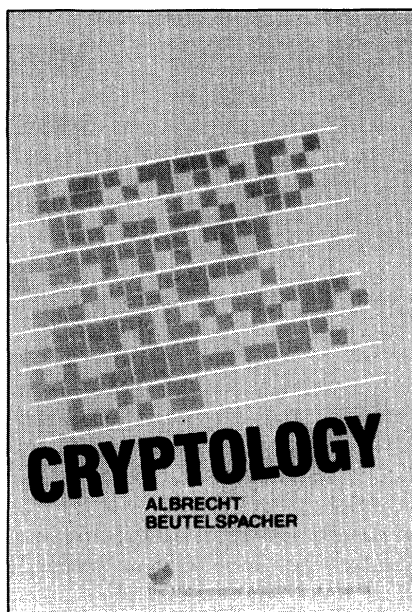
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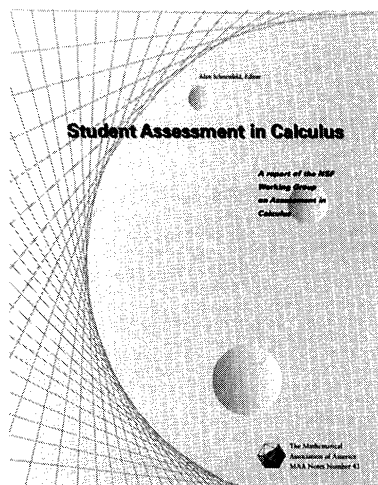
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ALAN SCHOENFELD, EDITOR

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It doesn't matter whether you teach a reform or traditional course, whether you have large or small sections, or whether you use lectures or laboratories. The bottom line is the same: When all is said and done, what counts is what our students understand. And that's what *Student Assessment in Calculus* is about.

Over the last ten years calculus instruction has changed in numerous ways. Whether they were trying on new ideas or following the more traditional routes towards conceptual understanding, both individual faculty and departments needed to know if their instruction was effective. To help deal with that issue, the National Science Foundation brought together a Working Group of experts in students' mathematical thinking, in assessment, and in calculus reform. The goals of their work were to:

- develop a framework to tailor calculus instruction to the students' needs;

- establish an agenda for further research on student understanding;
- describe how to make use of a range of techniques to test what students know, such as multiple-choice tests or short essay questions, student portfolios and "clinical" interviews;
- summarize major goals of the reform movement and describe the challenges faced by those who are taking a closer look at how students learn;
- illustrate the ways in which calculus projects attempt (via exams, papers, projects, etc.) to find out what their students have learned.

This book is the result of those efforts. If you teach calculus, if you want to see examples of useful assessment techniques, or if you are interested in issues of how to measure student learning in mathematics, then there is a lot for you here.

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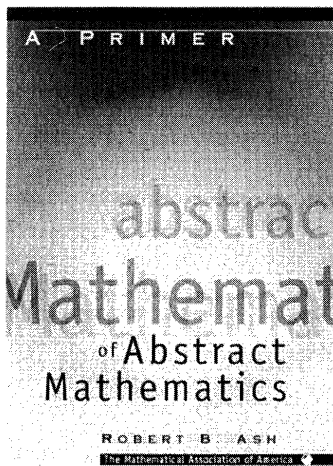
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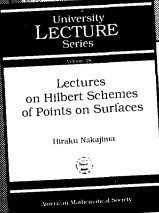
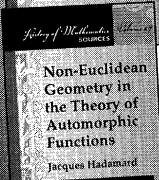
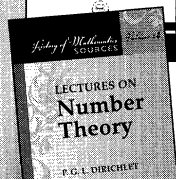
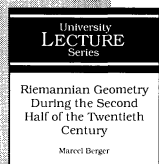
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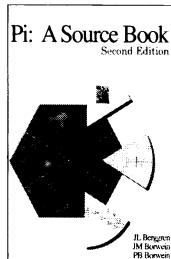
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