

Preface

Many students and faculty spend a lot of time wading through fat calculus books. This lean text covers single-variable calculus in 300 pages by

1. getting right to the point, and stopping there,
2. introducing some standard preliminary topics, such as trigonometry and limits, by using them in the calculus.

Lots of attention goes to the most important topics, such as maxima-minima problems, graphing, and a natural proof of the fundamental theorem. Maximizing the areas of rectangles leads into a discussion of current research on soap bubbles, some by undergraduates. Integration by table, partial fractions, integration by parts, and numerical methods get the burst of attention they deserve. Focusing partial fractions on distinct, linear factors provides the theory and ninety percent of the applications without the time-consuming algebra.

Hard exercises are sometimes marked with an asterisk.

Alan Durfee¹ and colleagues at Mount Holyoke College supplement the text with technology and interesting projects, such as “How the compound eye of the bee is designed so that it has the best vision.” Edward Burger at Williams², whose students study this text and his own video calculus course from Thinkwell.com for homework, has class time free from lecture for more interactive activities.

Students may also enjoy the news and contests in my web column at MathChat.org.

The result is this useful, short, inexpensive calculus book. It has no special perspective, no hidden agenda, no other purpose. The course can assume your agenda, rather than that of the book.

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