Introduction to Methods of Applied Mathematics
or
Advanced Mathematical Methods for Scientists and Engineers

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Contents

Anti-Copyright

Preface

During the summer before my final undergraduate year at Caltech I set out to write a math text unlike any other, namely, one written by me. In that respect I have succeeded beautifully. Unfortunately, the text is neither complete nor polished. I have a "Warnings and Disclaimers" section below that is a little amusing, and an appendix on probability that I feel concisesly captures the essence of the subject. However, all the material in between is in some stage of development. I am currently working to improve and expand this text.

This text is freely available from my web set. Currently I'm at http://www.its.caltech.edu/~sean. I post new versions a couple of times a year.

0.1 Advice to Teachers

If you have something worth saying, write it down.

0.2 Acknowledgments

I would like to thank Professor Saffman for advising me on this project and the Caltech SURF program for providing the funding for me to write the first edition of this book.

0.3 Warnings and Disclaimers

- This book is a work in progress. It contains quite a few mistakes and typos. I would greatly appreciate your constructive criticism. You can reach me at 'sean@its.caltech.edu'.
- Reading this book impairs your ability to drive a car or operate machinery.
- This book has been found to cause drowsiness in laboratory animals.
- This book contains twenty-three times the US RDA of fiber.
- Caution: FLAMMABLE - Do not read while smoking or near a fire.
- If infection, rash, or irritation develops, discontinue use and consult a physician.
- Warning: For external use only. Use only as directed. Intentional misuse by deliberately concentrating contents can be harmful or fatal. KEEP OUT OF REACH OF CHILDREN.
- In the unlikely event of a water landing do not use this book as a flotation device.
- The material in this text is fiction; any resemblance to real theorems, living or dead, is purely coincidental.
- This is by far the most amusing section of this book.
- Finding the typos and mistakes in this book is left as an exercise for the reader. (Eye ewes a spelling chequer from thyme too thyme, sew their should knot bee two many misspellings. Though I ain't so sure the grammar's too good.)
- The theorems and methods in this text are subject to change without notice.
- This is a chain book. If you do not make seven copies and distribute them to your friends within ten days of obtaining this text you will suffer great misfortune and other nastiness.
- The surgeon general has determined that excessive studying is detrimental to your social life.

- This text has been buffered for your protection and ribbed for your pleasure.
- Stop reading this rubbish and get back to work!

0.4 Suggested Use

This text is well suited to the student, professional or lay-person. It makes a superb gift. This text has a boquet that is light and fruity, with some earthy undertones. It is ideal with dinner or as an apertif. Bon apetit!

0.5 About the Title

The title is only making light of naming conventions in the sciences and is not an insult to engineers. If you want to learn about some mathematical subject, look for books with "Introduction" or "Elementary" in the title. If it is an "Intermediate" text it will be incomprehensible. If it is "Advanced" then not only will it be incomprehensible, it will have low production qualities, i.e. a crappy typewriter font, no graphics and no examples. There is an exception to this rule: When the title also contains the word "Scientists" or "Engineers" the advanced book may be quite suitable for actually learning the material.