

Preface to First Edition

In the course of our combinatorial work over the past several years, we have been fond of going to the computer from time to time in order to see some examples of the things we were studying. We have built up a fairly extensive library of programs, and we feel that others might be interested in learning about the methods and/or use of the programs. This book is the result.

It can be read as a collection of mathematical algorithms, and as such we hope the reader will find much that is new and interesting. Yet to do so would be to miss something that to us seems essential: the interchange between the computer programs per se, the computer, the algorithms, and ultimately the mathematics. To capture the complete spirit of this work, we urge the reader to study the programs themselves. The extra dimension that the computer and the mathematics bestow on each other is, we believe, worth the effort. Above all, we hope we have placed in the reader's hands a kit of building blocks with which the reader can construct more elaborate structures of his or her own.

The second-named author expresses his appreciation to the John Simon Guggenheim Memorial Foundation for its support during the writing of this book, and to Rockefeller University of New York for its hospitality during the same period. Much of the original research described herein was supported by the National Science Foundation.

We wish to thank Donald E. Knuth for reading the manuscript and for making a number of extremely valuable suggestions that resulted in improvements.