

# Preface

Algebraic topology is the study of geometric objects via algebraic methods. Familiarity with its main ideas and methods is quite useful for all undergraduate and graduate students who specialize in any of the many branches of mathematics and physics that have connections to topology, differential geometry, algebra, mathematical analysis, or differential equations. In selecting the content of this book and in writing it the author aspired to reach the following goals:

- to cover those ideas and results that form the backbone of algebraic topology and are sufficient to provide a beautiful, intuitively clear, and logically complete exposition;
- to make the book self-contained, while keeping it reasonably short;
- to make the exposition logically coherent, well-illustrated, and mathematically rigorous, at the same time preserving all the advantages of an informal and lively presentation;
- to structure the text and supplement it with exercises and solutions in such a way that the book becomes a ready-to-use tool for both teachers and students of the subject, as well as a convenient instrument for independent study.

A special attention was devoted to providing explicit algorithms for calculating the homology groups and for manipulating fundamental groups. These subjects are often missing from other books on algebraic topology.

The present book is a revised and slightly extended version of the Russian original publication.