Introduction

This volume grew from a discussion by the editors on the difficulty of finding good thesis problems for graduate students in topology. Although at any given time we each had our own favorite problems, we acknowledged the need to offer students a wider selection from which to choose a topic peculiar to their interests. One of us remarked, "Wouldn't it be nice to have a book of current unsolved problems always available to pull down from the shelf?" The other replied, "Why don't we simply produce such a book?"

Two years later and not so simply, here is the resulting volume. The intent is to provide not only a source book for thesis-level problems but also a challenge to the best researchers in the field. Of course, the presented problems still reflect to some extent our own prejudices. However, as editors we have tried to represent as broad a perspective of topological research as possible. The topics range over algebraic topology, analytic set theory, continua theory, digital topology, dimension theory, domain theory, function spaces, generalized metric spaces, geometric topology, homogeneity, infinite-dimensional topology, knot theory, ordered spaces, set-theoretic topology, topological dynamics, and topological groups. Application areas include computer science, differential systems, functional analysis, and set theory. The authors are among the world leaders in their respective research areas.

A key component in our specification for the volume was to provide *current* problems. Problems become quickly outdated, and any list soon loses its value if the status of the individual problems is uncertain. We have addressed this issue by arranging a running update on such status in each volume of the journal *TOPOLOGY AND ITS APPLICATIONS*. This will be useful only if the reader takes the trouble of informing one of the editors about solutions of problems posed in this book. Of course, it will also be sufficient to inform the author(s) of the paper in which the solved problem is stated.

We plan a complete revision to the volume with the addition of new topics and authors within five years.

To keep bookkeeping simple, each problem has two different labels. First, the label that was originally assigned to it by the author of the paper in which it is listed. The second label, the one in the outer margin, is a global one and is added by the editors; its main purpose is to draw the reader's attention to the problems.

A word on the indexes: there are two of them. The first index contains terms that are mentioned outside the problems, one may consult this index to find information on a particular subject. The second index contains terms that are mentioned in the problems, one may consult this index to locate problems concerning ones favorite subject. Although there is considerable overlap between the indexes, we think this is the best service we can offer the reader.

The editors would like to note that the volume has already been a success in the fact that its preparation has inspired the solution to several long-outstanding problems by the authors. We now look forward to reporting solutions by the readers. Good luck!

Finally, the editors would like to thank Klaas Pieter Hart for his valuable advice on TEX and METAFONT. They also express their gratitude to Eva Coplakova for composing the indexes, and to Eva Coplakova and Geertje van Mill for typing the manuscript.

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