

Contents

<i>Preface</i>	ix
<i>Acknowledgments</i>	xiii
I. Logic and Set Theory	
1.1 Introduction	1
1.2 Statements and Open Sentences	1
Exercises 1.2	7
1.3 Sets	10
Exercises 1.3	16
1.4 Ordered Pairs and Relations	19
Exercises 1.4	28
1.5 Functions and Kindred Matters	31
Exercises 1.5	40
1.6 Axiom Systems and Methods of Proof	47
II. The Natural Numbers	
2.1 Introduction	55
2.2 Arithmetic	56
Exercises 2.2	68
2.3 Ordering	70
Exercises 2.3	75
III. The Integers and the Rational Numbers	
3.1 Introduction	77
3.2 Preliminaries	78
Exercises 3.2	88
3.3 Additional Topics	90
Exercises 3.3	102
3.4 The Rational Numbers and Ordered Fields	106
Exercises 3.4	118
	vii

viii Contents

IV. The Real and Complex Numbers

4.1 Introduction.....	123
4.2 Construction of \mathbf{R}	124
Exercises 4.2.....	138

V. Metric Spaces

5.1 Introduction.....	147
5.2 Definition and Basic Properties.....	148
Exercises 5.2.....	154
5.3 Openness, Closedness, and Neighborhood Systems.....	157
Exercises 5.3.....	165
5.4 Continuous Functions.....	168
Exercises 5.4.....	171

VI. Limits

6.1 Introduction.....	173
Exercise 6.1.....	176
6.2 Generalized Limits.....	176
Exercises 6.2.....	189
6.3 Some Examples.....	194
Exercises 6.3.....	203

References.....	211
------------------------	------------

Answers to Selected Exercises.....	213
---	------------

<i>Subject Index.....</i>	215
---------------------------	------------