Contents

	Preface		ix
	Acknowledgments		xvii
1	**Sentential Logic: Basic Concepts and a Formal Language**		**1**
	1.1	Basic Logical Notions	1
	1.2	Elements of a Formal Language	3
	1.3	Well-Formed Formulas	5
	1.4	Translation of English to Sentential Wffs	10
2	**Sentential Logic: Proofs**		**17**
	2.1	Primitive Rules of Proof	17
	2.2	Sequents and Derived Rules	27
	2.3	Theorems	33
3	**Sentential Logic: Truth Tables**		**37**
	3.1	Truth Tables for Sentences	37
	3.2	Truth Tables for Sequents	40
	3.3	Tautologies	42
	3.4	Indirect Truth Tables	44
	3.5	English Counterexamples	47
4	**Predicate Logic: Formal Language**		**51**
	4.1	A Formal Language for Predicate Logic	51
	4.2	Translation of English to Quantified Wffs	58
5	**Predicate Logic: Proofs**		**65**
	5.1	Primitive Rules of Proof	65
	5.2	Theorems and Derived Rules of Proof	73

6 Predicate Logic: Models **77**

6.1 Finite Interpretations and Expansions with One-Place Predicates 77
6.2 Finite Countermodels for Arguments with One-Place Predicates 81
6.3 Finite Countermodels for Arguments with Many-Place Predicates 84
6.4 Infinite Countermodels 88

7 Predicate Logic with Identity **91**

7.1 Formal Language 91
7.2 Proofs 95
7.3 Countermodels 98

A Appendix: Answers to Selected Exercises **101**

A.1 Chapter 1 Answers 101
A.2 Chapter 2 Answers 103
A.3 Chapter 3 Answers 127
A.4 Chapter 4 Answers 133
A.5 Chapter 5 Answers 139
A.6 Chapter 6 Answers 150
A.7 Chapter 7 Answers 154