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1						Discrete and Combinatorial Mathematics, 5e															İ
+						Ralph P. Grimaldi															Ļ
+						Logic 2. Fundamentals of Logic.															+
)		1				Basic Connectives and Truth Tables.	1														t
)		1				Logical Equivalence: The Laws of Logic.	1												_		4
)		1				Logical Implication: Rules of Inference. The Use of Quantifiers.	1											+	+		t
)		1			0	Quantifiers, Definitions, and the Proofs of Theorems.	1														I
)						Summary and Historical Review. Sets, Relations, Functions															ł
)						3. Set Theory.															+
)	1	1				Sets and Subsets.		1													t
)		1				Set Operations and the Laws of Set Theory.		1											_		Į
)	7	1				Counting and Venn Diagrams. A First Word on Probability.		1											-		f
)					0	The Axioms of Probability (Optional).															İ
)						Conditional Probability: Independence (Optional). Discrete Random Variables (Optional).											$\vdash \vdash$	-	4		Ŧ
						Summary and Historical Review.															t
Ī					0	5. Relations and Functions.															Į
I		1				Cartesian Products and Relations. Functions: Plain and One-to-One.		1	1				H	H	H	H		\blacksquare	4		+
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Į		1			0	Special Functions.			1										4		Į
ŀ		1				The Pigeonhole Principle. Function Composition and Inverse Functions.			1									\dashv	+		Ŧ
I		Ė				Computational Complexity.			_												İ
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	1	1			0	Relations Revisited: Properties of Relations.				1											t
ļ		1				Computer Recognition: Zero-One Matrices and Directed Graphs.				1									_		Ŧ
		1				Partial Orders: Hasse Diagrams. Equivalence Relations and Partitions.				1								+	+		t
T					0	Finite State Machines: The Minimization Process.															I
1						Summary and Historical Review.															Ļ
ļ						Algebra 14. Rings and Modular Arithmetic.															+
	1		1			The Ring Structure: Definition and Examples.															t
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Ī						Summary and Historical Review.															İ
						15. Boolean Algebra and Switching Functions.															Ŧ
l						Switching Functions: Disjunctive and Conjunctive Normal Forms. Gating Networks: Minimal Sums of Products: Karnaugh Maps.	_											\dashv	\dashv		t
L					0	Further Applications: Don't-Care Conditions.															I
ŀ						The Structure of a Boolean Algebra (Optional). Summary and Historical Review.															÷
t						16. Groups, Coding Theory, and Polya's Theory of Enumeration.															t
	1		1			Definition, Examples, and Elementary Properties.															Į
ł			<u> </u>			Homomorphisms, Isomorphisms, and Cyclic Groups. Cosets and Lagrange's Theorem.							_		_		H	\dashv	\dashv		t
Ĺ					0	The RSA Cipher (Optional).															I
L						Elements of Coding Theory. The Hamming Metric.											$\vdash \vdash$	-	4		Ŧ
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İ					0	Group Codes: Decoding with Coset Leaders.															Į
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L					0	The Pattern Inventory: Polya's Method of Enumeration.															Į
ŀ						Summary and Historical Review. 17. Finite Fields and Combinatorial Designs.												-			Ŧ
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H						Integers 4. Properties of the Integers: Mathematical Induction.												-			+
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0					8. The Principle of Inclusion and Exclusion.								Т						
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0	1		1		Generalizations of the Principle.	Т								т					
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0					Divide and Conquer Algorithms.														
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					Graph Theory														
0					11. An Introduction to Graph Theory.														
0	1			1	1 Definitions and Examples.														
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