CONTENTS

								F	age
Pref	'ace	•	•	•	•	•	•	•	111
Nota	tional Explanations		•		•	•	•	•	ix
Intr	oduction							•	1
I.	Formal Systems and Formal Reasoning								6
	1. Definition of a Formal System								6
	2. An Example from Group Theory								8
	3. Representation and Interpretation								9
	4. Some Semiotical Concepts. The U-Langua	_	-					•	11
	5. An Attempt at Mathematical Grammatics	•	•	•	•	•	•	•	12
	6. Semiotical Aspect of a Formal System.								7 17
	The A-Language							•	17
									19
	8. The System 6								21
II.	The Finite Positive Connectives	•			•		•	•	24
	1. Preliminary Definitions and Notation .		_	_		_	_	_	24
	2. Informal Discussion								25
	3. Classical Form of the Rules								28
	4. The Systems LA(6) and LC(6)								29
	5. Some Preliminary Theorems								34
	6. The Technique of Elementary Derivation								٠.
	ity								39
	7. The Elimination Theorem							-	45
	8. The Natural System T								49
	9. Equivalent Propositional Algebras. Sy							•	
	HC								61
1	10. Concluding Remarks	•	•	•	•	•	•	•	63
								٠	
111.	. Quantifiers	•	•	•	•	•	•	•	65
	1. Preliminary Analysis								65
	2. Conventions of the B-Language								66
	3. Rules for Terms and Propositions								69
	4. The Systems LA* and LC*								73
	5. Theorems on Extensions								74
	6. Basic Theorems of the LA* and LC* Syst	ems	3						79
	7. The Systems TA*, TC*								83
	8. The Predicate Calculus								86
							•	•	
ΤΛ.	Negation	•	•	•	•	•	•	•	90
	1. Preliminary Analysis								90

viii A THEORY OF FORMAL DEDUCIBILITY

IV.	Negation (Continued)	
	2. An Example from Number Theory	92
	3. Formulation of the Rules	93
	4. Fundamental Theorems	96
	5. The Natural Systems T	99
	6. The Propositional Algebras	106
	7. Concluding Remarks	110
٧.	Modalities	112
	1. Analysis of Necessity	112
	2. The L-System for Necessity	113
	3. The T and H Systems for Necessity	116
	4. Discussion of Possibility	119
D4 1-1	14 acmorphyr	. ^ -