

CONTENTS

	PAGE
<i>Preface</i>	v
<i>Acknowledgments</i>	viii
<i>Preface to Revised Edition</i>	ix
<i>Introduction</i>	i
CHAPTER ONE. <i>Statements</i>	9
1. Conjunction, Alternation, and Denial	11
2. The Conditional	14
3. Iterated Composition	18
4. Use versus Mention	23
5. Statements about Statements	27
6. Quasi-Quotation	33
7. Parentheses and Dots	37
8. Reduction to Three Primitives	42
9. Reduction to One Primitive	45
10. Tautology	50
11. Selected Tautologous Forms	55
CHAPTER TWO. <i>Quantification</i>	63
12. The Quantifier	65
13. Formulæ	71
14. Bondage, Freedom, Closure	76
15. Axioms of Quantification	80
16. Theorems	85
17. Metatheorems	89
18. Substitutivity of the Biconditional	96
19. Existential Quantification	101
20. Distribution of Quantifiers	105
21. Alphabetic Variance	109
CHAPTER THREE. <i>Terms</i>	117
22. Class and Member	119
23. Logical Formulæ	123

CONTENTS

xi

	PAGE
24. Abstraction	128
25. Identity	134
26. Abstraction Resumed	140
27. Descriptions and Names	146
CHAPTER FOUR. <i>Extended Theory of Classes</i>	153
28. Stratification	155
29. Further Axioms of Membership	160
30. Substitutivity of Identity	167
31. Substitution for Variables	170
32. Further Consequences	175
33. Logical Product, Sum, Complement	179
34. Inclusion	185
35. Unit Classes	189
CHAPTER FIVE. <i>Relations</i>	195
36. Pairs and Relations	197
37. Abstraction of Relations	202
38. Converse, Image, Relative Product	208
39. The Ancestral	215
40. Functions	221
41. Abstraction of Functions	225
42. Identity and Membership as Relations	229
CHAPTER SIX. <i>Number</i>	235
43. Zero, One, Successor	237
44. Natural Numbers	241
45. Counter Sets	246
46. Finite and Infinite	250
47. Powers of Relations	253
48. Arithmetical Sum, Product, Power	259
49. Familiar Identities of Arithmetic	262
50. Ratios	266
51. Real Numbers	271
52. Further Extensions	275
CHAPTER SEVEN. <i>Syntax</i>	281
53. Formality	283

	PAGE
54. The Syntactical Primitive	287
55. Protosyntax	291
56. Formula and Matrix Defined	295
57. Axioms of Quantification Defined	299
58. Theorem Defined	302
59. Protosyntax Self-Applied	306
60. Incompleteness	310
APPENDIX. <i>Theorem versus Metatheorem</i>	319
<i>List of Definitions</i>	323
<i>List of Theorems and Metatheorems</i>	325
<i>Bibliographical References</i>	331
<i>Index of Proper Names</i>	339
<i>Index of Subjects</i>	341