Table of Contents

I. INTRODUCTION

	PAGE
§ 1. Logic and language	1
§ 2. Language	4
§ 3. Different levels of language	9
§ 4. Instrumental usage of language	17
§ 5. Definitions	20

II. THE CALCULUS OF PROPOSITIONS

§ 6. Propositional operations	23
§ 7. Truth tables	27
§ 8. Survey of possible operations. Tautologies	34
§ 9. Interpretation of tautological operations as connective operations	40
§ 10. Reduction of operations to other operations	43
§ 11. Derivations	47
§ 12. The rule of substitution	55
§ 13. The rule of replacement	59
§ 14. The rule of inference	64
§ 15. Secondary rules of inference	70
§ 16. Remarks on the method of derivation	76

III. THE SIMPLE CALCULUS OF FUNCTIONS

§ 17. Propositional functions	80
§ 18. Binding of variables	87
§ 19. Negation of operators	91
§ 20. The scope of an operator and the order of operators	96
§ 21. Synthetic assertions containing free argument variables	105
§ 22. Some concepts referring to functions	112

IV. THE SIMPLE CALCULUS OF FUNCTIONS (Continued)

PAGE

§ 23. Truth characters of one-place functions 125
§ 24. Definition of tautologies containing functions 129
§ 25. The use of case analysis for the construction of tautologies in propositional functions 131
§ 26. The rules of substitution and inference in the calculus of functions 137
§ 27. The rule for free variables 143
§ 28. Derivation of tautologies 144
§ 29. Secondary rules 153
§ 30. Derivations from synthetic premises 160
§ 31. The formal and the material conception of language 164
§ 32. The proof of consistency 167
§ 33. Two objections against the proof of consistency 177
§ 34. Logical evidence 182

V. THE CALCULUS OF CLASSES

§ 35. Classes 192
§ 36. The syllogism 200
§ 37. The principle of abstraction 209
§ 38. Classes of couples, triplets, and so on 211

VI. THE HIGHER CALCULUS OF FUNCTIONS

§ 39. Functions of higher types 214
§ 40. The antinomies and the theory of types 218
§ 41. The technique of the higher calculus 226
§ 42. The treatment of indefinite expressions 235
§ 43. The relation of identity 240
§ 44. The definition of number 247

VII. ANALYSIS OF CONVERSATIONAL LANGUAGE

§ 45. The deficiencies of traditional grammar 251

PAGE
§ 46. Proper names 255
§ 47. Descriptions 256
§ 48. The problem of individuals 266
§ 49. Fictitious existence 274
§ 50. Token-reflexive words 284
§ 51. The tenses of verbs 287
§ 52. Classification of functions 299
§ 53. Functions of higher types 301
§ 54. Descriptional functions 311
§ 55. Logical terms in a syntactical capacity 318
§ 56. Logical terms in a semantical capacity 327
§ 57. Logical terms in a pragmatic capacity 336
§ 58. Extraneous terms 344
§ 59. Classification of the parts of speech 349

VIII. CONNECTIVE OPERATIONS AND MODALITIES

§ 60. Practical reasons for the introduction of connective operations 355
§ 61. Formal characterization of connective operations 360
§ 62. The logical nature of connective operations 377
§ 63. Relative nomological statements 384
§ 64. The semi-adjunctive implication 388
§ 65. Modalities 391
§ 66. Modal interpretation of connective operations 400

Exercises 405
Solutions 417
Index 439

The sign '[Ex.]' at the end of a section indicates that there are exercises for this section in the appendix.