

# TABLE OF CONTENTS.

1. Foundations of Mathematics; Logic; Set Theory .....	1
2. Notation; Combinatorial Analysis .....	45
3. The Evolution of Algebra .....	47
4. Linear Algebra and Multilinear Algebra .....	57
5. Polynomials and Commutative Fields .....	69
6. Divisibility; Ordered Fields .....	85
7. Commutative Algebra. Algebraic Number Theory .....	93
8. Non Commutative Algebra .....	117
9. Quadratic Forms; Elementary Geometry .....	125
10. Topological Spaces .....	139
11. Uniform Spaces .....	145
12. Real Numbers .....	147
13. Exponentials and Logarithms .....	157
14. $n$ Dimensional Spaces .....	159
15. Complex Numbers; Measurement of Angles .....	161
16. Metric Spaces .....	165
17. Infinitesimal Calculus .....	167
18. Asymptotic Expansions .....	199
19. The Gamma Function .....	203
20. Function Spaces .....	205
21. Topological Vector Spaces .....	207
22. Integration in Locally Compact Spaces .....	219
23. Haar Measure. Convolution .....	231

## VIII TABLE OF CONTENTS

24. Integration in Non Locally Compact Spaces .....	237
25. Lie Groups and Lie Algebras .....	247
26. Groups Generated by Reflections; Root Systems .....	269
Bibliography .....	275
Index .....	297