

CONTENTS

| | |
|--|-----------------|
| Foreword by Kenneth Falconer | <i>page</i> vii |
| Preface | xxix |
| 1 Measures in abstract, topological and metric spaces | 1 |
| 1 Introduction | 1 |
| 2 Measures in abstract spaces | 1 |
| 3 Measures in topological spaces | 22 |
| 4 Measures in metric spaces | 26 |
| 5 Lebesgue measure in n -dimensional Euclidean space | 40 |
| 6 Metric measures in topological spaces | 43 |
| 7 The Souslin operation | 44 |
| 2 Hausdorff measures | 50 |
| 1 Definition of Hausdorff measures and equivalent definitions | 50 |
| 2 Mappings, special Hausdorff measures, surface areas | 53 |
| 3 Existence theorems | 58 |
| 4 Comparison theorems | 78 |
| 5 Souslin sets | 84 |
| 6 The increasing sets lemma and its consequences | 90 |
| 7 The existence of comparable net measures and their properties | 101 |
| 8 Sets of non- σ -finite measure | 123 |
| 3 Applications of Hausdorff measures | 128 |
| 1 A survey of applications of Hausdorff measures | 128 |
| 2 Sets of real numbers defined in terms of their expansions into continued fractions | 135 |
| 3 The space of non-decreasing continuous functions defined on the closed unit interval | 147 |
| Bibliography | 169 |
| Appendix A Dimension prints | 177 |
| Index | 193 |