## **CONTENTS**

	Introduction 1	
CHAPTER 1	PROBABILITY THEORY	5
	Preliminary Remarks 5	
1.1	Counting 5	
1.2	Probability 13	
1.3	Random Variables 22	
1.4	Some Properties of Random Variables 33	
1.5	•	
1.6	Review Problems for Chapter 1 64	
	•	
	STATISTICAL INFERENCE	68
CHAPIER Z	STATISTICAL INFERENCE	
	Preliminary Remarks 68	
2.1	Populations, Samples, and Statistics 68	
2.2	Estimation 79	
2.3	Hypothesis Testing 95	
2.4	Some Properties of Hypothesis Tests 106	
2.5	Some Comments on Nonparametric Statistics 114	
2.6	Review Problems for Chapter 2 119	
	COLUMN TECTOR DA CED ON THE DOLONG AND DECEMBRISHED AND THE DOLONG AND TH	
CHAPTERS	SOME TESTS BASED ON THE BINOMIAL DISTRIBUTION	123
	Preliminary Remarks 123	
3.1	The Binomial Test and Estimation of p 124	
3.2	The Quantile Test and Estimation of $x_n$ 135	
3.3	Tolerance Limits 150	
3.4	The Sign Test 157	
3.5	Some Variations of the Sign Test 166	
	•	

	••
v	21

CHAPTER 4	CONTINGENCY TABLES	179
	Preliminary Remarks 179	
4.1	The 2 × 2 Contingency Table 180	
4.2	The $r \times c$ Contingency Table 199	
4.3	The Median Test 218	
4.4	Measures of Dependence 227	
4.5	The Chi Squared Goodness-of-Fit Test 239	
4.6	Cochran's Test for Related Observations 250	
4.7	Some Comments on Alternative Methods of Analysis 258	
4.8	Review Problems for Chapters 3 and 4 260	
CHAPTER 5	SOME METHODS BASED ON RANKS	269
	Preliminary Remarks 269	
5.1	Two Independent Samples 271	
5.2	Several Independent Samples 288	
5.3	A Test for Equal Variances 300	
5.4	Measures of Rank Correlation 312	
5.5	Nonparametric Linear Regression Methods 332	
5.6	Methods for Monotonic Regression 344	
5.7	The One-Sample or Matched-Pairs Case 350	
5.8	Several Related Samples 367	
5.9	The Balanced Incomplete Block Design 387	
5.10	Tests with A.R.E. of 1 or More 396	
5.11	Fisher's Method of Randomization 407	
5.12	Some Comments on the Rank Transformation 417	
5.13	Review Problems for Chapter 5 420	
_		
CHAPTER 6	STATISTICS OF THE KOLMOGOROV-SMIRNOV TYPE	428
	Preliminary Remarks 428	
6.1	The Kolmogorov Goodness-of-Fit Test 428	
6.2	Goodness-of-Fit Tests for Families of Distributions 442	
6.3	Tests on Two Independent Samples 456	
6.4	Review Problems for Chapters 1 through 6 467	

## viii

## CONTENTS

REFERENCES 474
APPENDIX TABLES 505
ANSWERS TO ODD-NUMBERED EXERCISES 570
SERIES LIST 573
INDEX 578