

Contents

1	Introduction and Examples	1
1.1	Basics from Statistics	1
1.2	Conditional Distributions and Expectations	6
1.3	Overview and Motivating Examples	13
1.3.1	Bootstrap Tests for One-Sample Problems	15
1.3.2	Permutation Tests for Two-Sample Problems	18
1.4	Notes on the Literature	19
1.5	Exercises	20
	References	22
2	Empirical Measures, Empirical Processes	25
2.1	Properties of Empirical Measures	25
2.2	The Principle of Quantile Transformation	28
2.3	Some Results from the Theory of Empirical Processes	31
2.4	Exercises	34
	References	35
3	Goodness-of-Fit Tests	37
3.1	Simple Null Hypotheses	38
3.2	Tests for Parametric Families	42
3.3	Exercises	45
	References	46
4	Rank Tests	47
4.1	Parametric Score Tests	47
4.2	Deriving Rank Tests by Conditioning	52
4.3	Justification of Rank Tests via Statistical Functionals	61
4.4	Exercises	65
	References	68

5 Asymptotics of Linear Resampling Statistics	71
5.1 General Theory	71
5.2 Application to Special Resampling Procedures	76
5.2.1 Multi-Sample Problems, Permutation Tests	76
5.2.2 One-Sample Problems, Bootstrap Tests	81
5.3 Non-exchangeability, Studentization	84
5.4 Exercises	87
References	88
6 Bootstrap Methods for Linear Models	91
6.1 Deterministic Design	91
6.2 Random Design	97
6.3 Exercises	102
References	103
7 Projection Tests	105
7.1 Empirical Likelihood Ratio Tests for Vector Means	105
7.2 Some Modifications and Generalizations	114
7.3 Exercises	117
References	117
8 Some Extensions	119
8.1 Linear Rank Tests for One-Sample Problems	119
8.2 Tied Observations	123
8.3 Exercises	126
References	126
Index	127