

Table of Contents

- Chapter 1 Introduction
 - 1 What Is Biostatistics?
 - 2 Why Do I Need Statistics?
 - 3 How Much Mathematics Do I Need?
 - 4 How to Study Statistics?
 - 5 Reference
- Chapter 2 Summarizing Data
 - 1 Raw Data and Basic Terminology
 - 2 The Levels of Measurements
 - 3 Frequency Distributions Frequency Tables Relative Frequency
 - 4 Graphs Bar Graphs Pie Charts Line Graphs Histograms Stem and Leaf Plots
 - 5 Clinical Trials
 - 6 Confounding Variables
 - 7 Exercises
 - 8 References
- Chapter 3 Measures of Central Tendency, Dispersion, and Skewness
 - 1 Introduction
 - 2 Mean
 - 3 Weighted Mean
 - 4 Median
 - 5 Mode
 - 6 Geometric Mean
 - 7 Harmonic Mean
 - 8 Mean and Median of Grouped Data
 - 9 Mean of Two or More Means
 - 10 Range
 - 11 Percentiles and Interquartile Range
 - 12 Box-whisker Plot
 - 13 Variance and Standard Deviation
 - 14 Coefficient of Variation
 - 15 Variance of the Grouped Data
 - 16 Skewness
 - 17 Exercises
 - 18 References
- Chapter 4 Probability
 - 1 Introduction
 - 2 Sample Space and Events
 - 3 Basic Properties of Probability
 - 4 Independence and Mutually Exclusive Events
 - 5 Conditional Probability
 - 6 Bayes Theorem
 - 7 Rates and Proportions Prevalence and Incidence Sensitivity and Specificity Relative Risk and Odds Ratio
 - 8 Exercises

- 9 References
- Chapter 5 Probability Distributions
 - 1 Introduction
 - 5 Normal Distribution Properties of Normal Distributions Standard Normal Distribution Using Normal Probability Table Further Applications of Normal Probability Normal Approximation to the Binomial Distribution
 - 2 Binomial Distribution
 - 3 Poisson Distribution
 - 4 Poisson Approximation to Binomial Distribution
 - 6 Exercises
 - 7 References
- Chapter 6 Sampling Distributions
 - 1 Introduction
 - 2 Sampling Distribution of the Mean Standard Error of the Sample Mean Central Limit Theorem
 - 3 Student's t Distribution
 - 4 Exercises
 - 5 References
- Chapter 7 Confidence Intervals and Sample Size
 - 1 Introduction
 - 2 Confidence Intervals for the Mean and Sample Size n when σ is Known
 - 3 Confidence Intervals for the Mean when σ is Not Known
 - 4 Confidence Intervals for the Binomial Parameter p
 - 5 Confidence Intervals for the Variances and Standard Deviations
 - 6 Exercises
 - 7 References
- Chapter 8 Hypothesis Testing: One Sample Case
 - 1 Introduction
 - 2 Concept of Hypothesis Testing
 - 3 One-tailed Z Test of the Mean of a Normal Distribution When σ is Known
 - 7 One-Sample Test for a Binomial Proportion
 - 4 Two-tailed Z Test of the Mean of a Normal Distribution When σ is Known
 - 5 t Test of the Mean of a Normal Distribution
 - 6 The Power of a Test and Sample Size
 - 8 One-Sample Test for the Variance of a Normal Distribution
 - 9 Exercises
 - 10 References
- Chapter 9 Hypothesis Testing: Two-Sample Case
 - 1 Introduction
 - 2 Two Sample Z Test for Comparing Two Means
 - 3 Two Sample t Test for Comparing Two Means with Equal Variances
 - 4 Two Sample t Test for Comparing Two Means with Unequal Variances
 - 5 The Paired t Test
 - 6 Z Test for Comparing Two Binomial Proportions
 - 7 The Sample Size and Power of a Two Sample Test Estimation of a Sample Size The Power of a Two Sample Test

- 8 The F Test for the Equality of Two Variances
- 9 Exercises
- 10 References
- Chapter 10 Categorical Data Analysis
- 1 Introduction
- 2 2 x 2 Contingency Table
- 3 r x c Contingency Table
- 9 References
- 4 The Cochran-Mantel-Haenszel Test
- 5 The McNemar Test
- 6 The Kappa Statistic
- 7 Goodness of Fit Test
- 8 Exercises
- Chapter 11 Regression Analysis and Correlation
- 1 Introduction
- 2 Simple Linear Regression Description of Regression Model Estimation of Regression Function Aptness of a Model
- 3 Correlation Coefficient Significance of Correlation Coefficient
- 4 Coefficient of Determination
- 5 Multiple Regression
- 6 Logistic Regression The Logistic Regression Model Fitting the Logistic Regression Model
- 7 Multiple Logistic Regression Model
- 8 Exercises
- 9 References
- Chapter 12 One-Way Analysis of Variance
- 1 Introduction
- 2 Factors and Factor Levels
- 3 Statement of the Problem and Model Assumptions
- 4 Basic Concepts in ANOVA 5. F-test for Comparison of k Population Means
- 6 Multiple Comparisons Procedures
 - Least Significant Difference Method
 - Bonferroni Approach
 - Scheffe's Method
 - Tukey's Procedure
- 7 One-way ANOVA Ran