Preface

Approach

Elementary Statistics: A Brief Version, Fourth Edition, is a shorter version of the popular text *Elementary Statistics: A Step by Step Approach,* Sixth Edition. This softcover edition includes all the features of the longer book, but it is designed for a course in which the time available limits the number of topics covered.

Elementary Statistics: A Brief Version was written to help students in the beginning statistics course whose mathematical background is limited to basic algebra. The book follows a nontheoretical approach without formal proofs, explaining concepts intuitively and supporting them with abundant examples. The applications span a broad range of topics certain to appeal to the interests of students of diverse backgrounds and include problems in business, sports, health, architecture, education, entertainment, political science, psychology, history, criminal justice, the environment, transportation, physical sciences, demographics, eating habits, and travel and leisure.

About This Book

While a number of important changes have been made to this edition, the learning system remains untouched and provides students with a useful framework in which to learn and apply concepts. Some of the retained features include the following:

- **Over 1200** exercises are located at the end of major sections within each chapter.
- **Hypothesis-Testing Summaries** are found at the end of Chapter 9 (z, t, χ^2, and F tests for testing means, proportions, and variances) and Chapter 11 (correlation, chi-square, and ANOVA), to show students the different types of hypotheses and the types of tests to use.
- A **Data Bank** listing various attributes (educational level, cholesterol level, gender, etc.) for 100 people and 13 additional data sets using real data are included and referenced in various exercises and projects throughout the book, including the projects presented in Data Projects sections.
- A **reference card** containing the formulas and the z, t, χ^2, and PPMC tables is included with this textbook.
- End-of-chapter **Summaries, Important Terms,** and **Important Formulas** give students a concise summary of the chapter topics and provide a good source for quiz or test preparation.
- **Review Exercises** are found at the end of each chapter.
- Special sections called **Data Analysis** require students to work with a data set to perform various statistical tests or procedures and then summarize the results. The data are included in the Data Bank in Appendix D and can be downloaded from the book's website at www.mhhe.com/bluman
- **Chapter Quizzes,** found at the end of each chapter, include multiple-choice, true/false, and completion questions along with exercises to test students' knowledge and comprehension of chapter content.

- The **Appendices** provide students with an essential algebra review, an outline for report writing, extensive reference tables, a glossary, and answers to all quiz questions, all odd-numbered exercises, selected even-numbered exercises, and an alternate method for using the standard normal distribution.

Changes in the Fourth Edition of the Brief Version

This edition of *Elementary Statistics* is updated and improved for students and instructors in the following ways:

- **Over 200** new exercises have been added, **most using real data,** and many now incorporate thought-provoking questions requiring students to interpret their results.
- The text is updated throughout with current data and statistics including *Unusual Stats* and *Interesting Facts; Speaking of Statistics; Critical Thinking Challenges; Statistics Today* openers; worked examples; *Data Analysis Exercises;* and Data Sets.
- A new feature, *Applying the Concepts,* is added to each section and gives students an opportunity to think about the concepts and to apply them to hypothetical examples and scenarios similar to those found in newspapers, magazines, and news programs.
- Another new feature is that titles have been added to application problems to emphasize their real world relevance.
- The text layout and color palette have been redesigned to increase the readability and ease of use by students and instructors.

Based on user suggestions and reviewer comments on the third edition, the following improvements were made:

Chapter 1 Another example of interval-level data has been added. The explanation of random sampling was expanded.

Chapter 2 The explanation of class, frequency, relative frequency, and open-ended frequency distributions was expanded. An explanation was given on how to analyze frequency distributions.

Chapter 3 A greater explanation was given of the mode, including bimodal and multimodal data sets. Also added were the range rule of thumb and an exercise on finding the median for grouped data.

Chapter 4 More detailed explanation was added on the use of the words *and* and *or* in classical probability. A tree diagram was included to help determine the sample space for Exercise 4–40.

Chapter 5 Coverage of discrete variables was expanded.

Chapter 6 An explanation was included on how the area under a continuous curve relates to a probability by using a uniform distribution. More information on the distribution of sample means was given.

Chapter 7 A brief explanation of the sampling distribution of a sample proportion was added.

Chapter 8 The explanation on using the *P*-value is now boxed.

Chapter 10 The concepts of independent and dependent variables and simple and multiple relationships were expanded. The topic of the relationship of the scatter plot to the strength of the correlation coefficient was moved from Section 10–4 to Section 10–3.

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