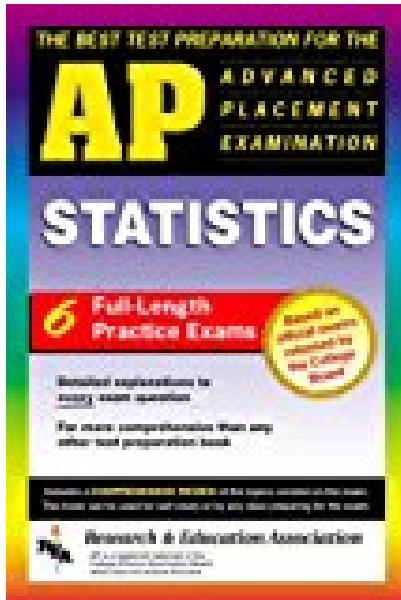


# AP Statistics Advanced Placement AP Test Preparation

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## BOOK DETAILS

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- Pages : 496 Pages
- Publisher : Research & Education Association
- Language : English
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## BOOK SYNOPSIS

Get the AP college credits you've worked so hard for... Our savvy test experts show you the way to master the test and score higher. This new and fully expanded edition examines all AP Statistics areas including in-depth coverage of univariate and bivariate data, measures of dispersion, sampling, and hypothesis testing. The comprehensive review covers every possible exam topic: exploring data, planning a study, anticipating patterns, and statistical inferences. Features 6 full-length practice exams with all answers thoroughly explained. Follow up your study with REAs test-taking strategies, powerhouse drills and study schedule that get you ready for test day. DETAILS - Comprehensive, up-to-date subject review of every AP Statistics topic used in the AP exam. - Study schedule tailored to your needs - Packed with proven key exam tips, insights and advice - 6 full-length practice exams. All exam answers are fully detailed with easy-to-follow, easy-to-grasp explanations. TABLE OF CONTENTS About Research & Education Association Independent Study Schedule CHAPTER 1 - SUCCEEDING IN AP STATISTICS About The Advanced Placement Program The AP Statistics Exam About the Review Sections Scoring the Exam Scoring the Multiple-Choice Section Scoring the Free-Response Questions The Composite Score Scores that Receive College Credit and/or Advanced Placement Studying for Your AP Examination Test-Taking Tips CHAPTER 2 - EXPLORING DATA Exploring Univariate Data Standardized Scores (Z-Scores) Exploring Bivariate Data Exploring Categorical Data: Frequency Tables Measures of Central Tendency Range and Percentiles Measures of Dispersion Simplified Methods for Computing the Standard Deviation and Variance Sampling Error CHAPTER 3 - PLANNING A STUDY Methods of Data Collection Planning and Conducting Surveys Planning and Conducting Experiments CHAPTER 4 - ANTICIPATING PATTERNS Review of Laws of Large Numbers Conditional Probabilities and Independence Discrete Random Variables Mathematical Expectation of Discrete Random Variables Normal Distribution Sampling Distributions CHAPTER 5 - STATISTICAL INFERENCE Confidence Intervals Hypothesis Testing Type I and Type II Errors Hypothesis Testing - Single Sample Hypothesis Testing for Two Populations PRACTICE TEST 1 Test 1 Answer Key Detailed Explanations of Answers PRACTICE TEST 2 Test 2 Answer Key Detailed Explanations of Answers PRACTICE TEST 3 Test 3 Answer Key Detailed Explanations of Answers PRACTICE TEST 4 Test 4 Answer Key Detailed Explanations of Answers PRACTICE TEST 5 Test 5 Answer Key Detailed Explanations of Answers PRACTICE TEST 6 Test 6 Answer Key Detailed Explanations of Answers APPENDIX: FORMULAS AND TABLES ANSWER SHEETS EXCERPT About Research & Education Association Research & Education Association (REA) is an organization of educators, scientists, and engineers specializing in various academic fields. Founded in 1959 with the purpose of disseminating the most recently developed scientific information to groups in industry, government, high schools, and universities, REA has since become a successful and highly respected publisher of study aids, test preps, handbooks, and reference works. REAs Test Preparation series includes study guides for all academic levels in almost all disciplines. Research & Education Association publishes test preps for students who have not yet completed high school, as well as high school students preparing to enter college. Students from countries around the world seeking to attend college in the United States will find the assistance they need in REAs publications. For college students seeking advanced degrees, REA publishes test preps for many major graduate school admission examinations in a wide variety of disciplines, including engineering, law, and medicine. Students at every level, in every field, with every ambition can find what they are looking for among REAs publications. While most test preparation books present practice tests that bear little resemblance to the actual exams, REAs series presents tests that accurately depict the official exams in both degree of difficulty and types of questions. REAs practice tests are always based upon the most recently administered exams, and include every type of question that can be expected on the actual exams. REAs publications and educational materials are highly regarded and continually receive an unprecedented amount of praise from professionals, instructors, librarians, parents, and students. Our authors are as diverse as the fields represented in the books we publish. They are well-known in their respective disciplines and serve on the faculties of prestigious high schools, colleges, and universities throughout the United States and Canada. Chapter 1 - SUCCEEDING IN AP STATISTICS The objective of this book is to prepare you for the Advanced Placement Examination in Statistics by providing you with an accurate representation of the test. Toward that end, we provide an extensive review and practice tests that cover the material one would expect to study in a typical Advanced Placement course and see on the exam itself. Six full-length practice Statistics exams are provided. Following each practice exam is an answer key and a detailed explanation for every question. The explanations not only provide the correct response but also explain why none of the remaining answers is the best choice. By studying the appropriate review sections, taking the corresponding exams, and studying the answer explanations, you can discover your strengths and weaknesses, and prepare yourself to score well on the AP Statistics examination. ABOUT THE ADVANCED PLACEMENT PROGRAM The Advanced Placement program consists of two components: an AP course and an AP exam. Advanced Placement examinations are offered each May at participating schools and multischool centers throughout the world. The Advanced Placement program is designed to provide high school students with the opportunity to pursue college-level studies while still attending high school. In turn, the participating colleges grant credit and/or advanced placement to students who do well on the examination. The AP Statistics course is designed to represent the content of a typical introductory college course in statistics. The full-year course covers the skills and knowledge expected of students in the field of introductory statistics. The course is intended for high school students who wish to complete studies equivalent to a one-semester, non-calculus-based college course in statistics. Additional information about the AP program and the AP Statistics exam is available by contacting: AP Services Educational Testing Service P.O. Box 6671 Princeton, NJ 08541-6671 Phone: (609) 771-7300 Fax: (609) 530-0482 E-mail: apexams@ets.org Website: <http://www.collegeboard.com> THE AP STATISTICS EXAM The AP Statistics exam lasts 180 minutes and is divided into two sections: I. Multiple-Choice (50% of your grade): This 90-minute section is composed of 35 questions designed to test your proficiency in a wide variety of topics. The questions test examinees ability to explore data, plan a statistical study, anticipate patterns, and make statistical inferences. II. Free-Response (a combined 50% of your grade): This 90-minute section requires the student to answer four to seven open-ended questions and to complete one investigative task question involving more extended reasoning. Each open-ended question has been created to be answered in approximately 10 minutes. The longer investigative-task question has been created to be answered in approximately 30 minutes. The questions require students to relate different content areas as they plan an extensive solution to a statistics or probability problem. Students are expected to use their analytical and organizational skills to formulate cogent answers in writing their responses. It will be expected that students will show enough of their work to allow the readers to be able to follow their logic. Note that it is not necessary to write out routine statistical calculations that can be done on a calculator. Each student is expected to bring a calculator with statistical capabilities to the examination. The computational capabilities of the calculator should include common univariate and bivariate summaries through linear regression. The graphical capabilities of the calculator should include common univariate and bivariate displays such as boxplots, histograms, and scatterplots. Most graphing calculators on the market are acceptable; non-graphing calculators are allowed only if they have the computational capabilities described previously. The following, however, are not permitted: powerbooks and portable computers, pocket organizers, electronic writing pads, pen input devices, or devices with typewriter-style, or QWERTY, keyboards. ABOUT THE REVIEW SECTIONS As mentioned earlier, this book has a review chapter for each of the four topics covered on the exam. The following are the four review chapters in this book that cover the topics on the AP Statistics: - Exploring Data - Planning a Study - Anticipating Patterns - Statistical Inferences The review chapters provide a thorough discussion of the material tested on the exam. By studying the review chapters and by taking the practice test(s), you can prepare yourself to score high on the AP Statistics exam. SCORING THE EXAM The multiple-choice section of the exam is scored by crediting each correct answer with one point and deducting one-fourth of a point for each incorrect answer. Unanswered questions receive neither credit nor deduction. The free-response questions are graded by readers chosen from around the country for their familiarity with the AP Program. Each free-response question is read and scored with the reader providing the score on a 0-to-4 (0 being the lowest and 4 the highest) scale. The free-response questions are scored based on the statistical knowledge and communication the student used to answer the question. The statistical knowledge criteria include identifying the important concepts of the problem and demonstrating statistical concepts and techniques that result in a correct solution of the problem. The communication criteria include an explanation of what was done and why, along with a statement of conclusions drawn. Once the free-response questions have been graded by all of the readers, the scores are converted. The open-ended questions count as 75% of the free-response score; the investigative-task question counts as 25%. SCORING THE MULTIPLE-CHOICE SECTION For the multiple-choice section, use this formula to calculate your raw score: Number Right - (Number Wrong x 1/4) = Raw Score (round to the nearest whole number) Note: Do not include unanswered questions in the formula. SCORING THE FREE-RESPONSE QUESTIONS For the free-response section, use this formula to calculate your raw score: 5 Open-Ended Questions (75%) + 1 Investigative-Task Question (25%) = Raw Score THE COMPOSITE SCORE To obtain your composite score, use the following method: Multiple-Choice Raw Score + Free-Response Raw Score = Raw Score AP grades are interpreted as follows: 5-extremely well qualified, 4-well qualified, 3-qualified, 2-possibly qualified, and 1-no recommendation. SCORES THAT RECEIVE COLLEGE CREDIT AND/OR ADVANCED PLACEMENT Most colleges grant students who earn at least a "3" college credit and/or advanced placement. You should check with your school guidance office about specific college requirements. STUDYING FOR YOUR AP EXAMINATION It is never too early to start studying. The earlier you begin, the more time you will have to sharpen your skills. Do not procrastinate! Cramming is not an effective way to study, since it does not allow you the time needed to learn the test material. It is very important for you to choose the time and place for studying that works best for you. Some students may set aside a certain number of hours every morning to study, while others may choose to study at night before going to sleep. Other students may study during the day, while waiting on a line, or even while eating lunch. Only you can determine when and where your study time will be most effective. But be consistent and use your time wisely. Work out a study routine and stick to it! When you take the practice exam(s), try to make your testing conditions as much like the actual test as possible. Turn your television and radio off, and sit down at a quiet table free from distraction. Make sure to time yourself. Complete the practice test(s), score your test(s) and thoroughly review the explanations for the questions you answered incorrectly. However, do not review too much during any one sitting. Concentrate on one problem area at a time by reviewing the question and explanation, and by studying your review(s) until you are confident that you completely understand the material. Since you will be allowed to write in your test booklet during the actual exam, you may want to write in the margins and spaces of this book when practicing. However, do not make miscellaneous notes on your answer sheet. Mark your answers clearly and make sure the answer you have chosen corresponds to the question you are answering. Keep track of your scores! This will enable you to gauge your progress and discover general weaknesses in particular sections. You should carefully study the reviews that cover the topics causing you difficulty, as this will build your skills in those areas. To get the most out of your studying time, we recommend that you follow the Study Schedule. It details how you can best budget your time. TEST-TAKING TIPS Although you may be unfamiliar with tests such as the Advanced Placement exams, there are many ways to acquaint yourself with this type of examination and help alleviate your test-taking anxieties. Listed below are ways to help yourself become accustomed to the AP exam, some of which may also be applied to other standardized tests. Become comfortable with the format of the AP Examination in Statistics. When you are practicing to take the exam(s), simulate the conditions under which you will be taking the actual test(s). You should practice under the same time constraints as well. Stay calm and pace yourself. After simulating the test only a couple of times, you will boost your chances of doing well, and you will be able to sit down for the actual test much more confidently. Know the directions and format for each section of the exam. Familiarizing yourself with the directions and format of the different test sections will not only save you time, but will also ensure that you are familiar enough with the AP exam to avoid anxiety (and the mistakes caused by being anxious). Work on the easier questions first. If you find yourself working too long on one question, make a mark next to it in your test booklet and continue. After you have answered all of the questions that you can, go back to the ones you have skipped. Use the process of elimination when you are unsure of an answer. If you can eliminate three of the answer choices, you have given yourself a fifty-fifty chance of getting the item correct since there will only be two choices left from which to make a guess. If you cannot eliminate at least three of the answer choices, you may choose not to guess, as you will be penalized one-quarter of a point for every incorrect answer. Questions not answered will not be counted. Be sure that you are marking your answer in the oval that corresponds with the correct item in the test booklet. Since the multiple-choice section is graded by machine, marking the wrong answer will throw off your score.

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