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GRUBER'S COMPLETE ACT® GUIDE 2019

"Gary Gruber is the Guru of College Testing Programs."
—The Light, San Antonio, Texas

7th Edition

Gary R. Gruber, Ph.D.

I hope Dr. Gruber's work reaches many more students. I know that they will find his suggestions priceless.
Julie Martin, Phoenix Gazette

I have enjoyed referring students to Dr. Gruber's book to prepare for the ACT. It provides the right level of instruction for students needing help with test content skills.
Cynthia Jackson

Top ratings for the book in the areas of readability, vocabulary, critical-thinking skills, and practice tests, with a special star for the explanatory answers.
Paulette Dewey, former English Department Chairperson, Robert S. Rogers High School, Toledo, Ohio

DAVIES

*Praise for Gruber's ACT® prep system . . .**

I bought this book for my daughter, who is going to take the ACT. She claimed that the book was exceptional, and she mentioned that she wished the strategies in the book were taught at her school. Because of this book she feels more confident than ever in taking the ACT. Thank you for such a great book!—*Barnes and Noble customer review*

I was glad to see the focus of your book is on developing critical-thinking skills, which are helpful in all walks of life, not just for taking tests.—*Alan Ginsburg, Consultant, Planning and Evaluation Service, U.S. Department of Education, Washington, DC*

The work that Gary Gruber does should be given to every student and every teacher.—*Dr. Shirley Thornton, Deputy Superintendent, California State Department of Education*

This book is probably the most scholarly, useful, and complete work of its kind now on the market. —*Henry Lewenberg, English Department Chairman, Channel Islands High School, Oxnard, California*

The Gruber book is the only commercial book that I've seen that would actually help a test-taker. —*David Owen,* Washington Post

Dr. Gruber is recognized as the leading expert on standardized tests. His results have been lauded throughout the country. His personal presentation spreads "contagious enthusiasm" like an epidemic with his audiences.—*Public Broadcasting Service*

Your vocabulary treatment is outstanding! This book is the best yet!—*Mary McGuinness, Curriculum Specialist (English), Temple High School, Temple City, California*

This is simply a great book. It is organized into clear, concise strategies. After reading this book, I can safely say that I am confident in my math abilities. If you don't understand something, you're probably just skimming through it. Don't do that. Absorb it all, because each and every word is important.—*Amazon customer review*

Five stars. I bought Dr. Gruber's guide for my daughter to help her prepare for the ACT test—very helpful.—*Amazon customer review*

Because of your book, I now have an excellent chance of getting into the school of my choice. —*Beth Kingfisher, San Francisco, California*

An excellent book throughout.—*Glenn Ballard, Math Department Head, William H. Harrison High School, Evansville, Indiana*

Because of my score, I received a New York State Regents Scholarship. . . . I feel that I could not have attained such scores without the help of your book.—*Michael Harrington, New York*

Dr. Gruber has created a unique program. The student develops confidence, comfort, and security. He/she is made aware of the correct thinking approach to answer questions with the greatest accuracy and the least amount of panic.—*Dr. Virgil Hollis, Superintendent of Schools, Marin County, California*

"Excellent-plus" for the Math Refresher section and for the explanatory answers to the questions in the Practice Tests.—*John J. Bailey, Math Department Supervisor, Kingston City Schools, Kingston, New York*

Dr. Gruber is clearly serious about trying to understand the links between critical thinking and test taking. Bravo!—*Chester Finn, Assistant Secretary for Educational Research and Improvement, U.S. Department of Education*

I taught school for twenty-six years in the states and was never so interested in math!—*Natalie Ridgway, St. Croix, Virgin Islands*

It is amazing what you are accomplishing in developing critical thinking skills in such a short time. It is such a joy to watch my daughter's evaluation abilities improve!—*Carland Nicholson, Ross, California*

Thanks a lot for all you did for our son in such a short period of time.—*Larry and Jackie Slayen, San Anselmo, California*

The Practice Test questions are very close to the actual exam questions. The explanatory answers are concise and easy to follow.—*Terry Lawler, English Department Co-chairman, Tremper High School, Kenosha, Wisconsin*

The explanatory answers for the practice tests are superlative.—*Bob Ingalls, English Department Chairman, Mount Vernon High School, Alexandria, Virginia*

The way Dr. Gruber explained the problem was so easy. Where I go to school the teachers never teach how to examine problems or teach the kind of thinking Dr. Gruber did.—*Student from the audience of the* People Are Talking *show, CBS, San Francisco*

What Dr. Gruber is giving the student is an increase in intelligence. He offers students preparation in test-taking strategies designed to save time in the testing room by zeroing in on a fast, logical way to answer a problem.—*Valerie Sullivan, United Press International*

When you want the solution to the problem, tap the super genius, Gary Gruber.—Washington Post

With the use of Gruber's special techniques, students can raise their test scores significantly and increase their general learning ability.—Courier Journal*, Louisville, Kentucky*

Your ability to communicate your critical-thinking method to every level of schooling is outstanding. Now all children can be successful in school using your critical-thinking model.—*Effie Jones, Ed.D., Associate Executive Director, American Association of School Administrators*

Your book will be so helpful to all of us.—*Willadine Bain, Assistant Director, Reading/English, Language Arts, The School District of Philadelphia, Pennsylvania*

Your program is superb! I'll spread the word!—*Gretchen Debaubigny, San Francisco, California*

I bought this book for my son so he could get acquainted with the exam requirements. Gruber has a good reputation for prep materials, and I found this to be very useful.—*Amazon customer review*

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It's quick and easy, and it connects you to Dr. Gruber, study alerts, continuing advice, bonus features, and premium content. Most important, registration will make your experience with The Gruber Method personal. Just go to DaviesPublishing.com/Gruber/ACT/book-registration and follow the instructions. It will be helpful to have your book's ISBN (back cover) at hand. Thank you!

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*This book is a brand-new edition specifically tuned for the ACT® exam by Dr. Gruber personally. The praise for Dr. Gruber's critical-thinking methodology quoted here is documented.

GRUBER'S COMPLETE ACT® GUIDE 2019

7th Edition

Gary R. Gruber, Ph.D.

The City College of New York (B.S., Physics)
Columbia University (M.A., Physics)
Yeshiva University (Ph.D., Astrophysics)

Davies Publishing, Inc.
Los Angeles

To the millions of students who have successfully used my books to markedly increase their scores and get into the college of their choice.

And to all of the students who seek to achieve and excel in both school and life, and to the parents and teachers who encourage their children in the path of curiosity, critical thinking, and joyful passion for life and learning.

Gary R. Gruber, Ph.D.

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Introduction

IMPORTANT NOTE ABOUT THIS BOOK AND ITS AUTHOR

This book is the most up-to-date and complete guide to the current ACT. Every exam is patterned after the ACT, and *all* the strategies and techniques deal with the ACT. The ACT incorporates all the Gruber Critical-Thinking Strategies.

This book was written by Dr. Gary Gruber, the leading authority on testing and test preparation, who knows more than anyone else in the test-prep market exactly what is being tested in standardized tests such as the ACT. In fact, the procedures to answer the ACT questions rely more heavily on the Gruber Critical-Thinking Strategies than ever before, and this is the only book that has the exact thinking strategies you need to use to maximize your ACT score. Gruber's test preparation books are used by the nation's school districts more than any other books.

Dr. Gruber has published more than 40 books with major publishers on test-taking and critical-thinking methods, with more than 7 million copies sold. He has also authored more than 1,000 articles on his work in scholarly journals and nationally syndicated newspapers, has appeared on numerous television and radio shows, and has been interviewed by hundreds of magazines and newspapers. He has developed major programs for school districts and for city and state educational agencies for improving and restructuring curriculum, increasing learning ability and test scores, increasing motivation, developing a passion for learning and problem solving, and decreasing the student dropout rate. For example, PBS (the Public Broadcasting Service) chose Dr. Gruber to train the nation's teachers on how to prepare students for college entrance tests through a national satellite teleconference and videotape. His results have been lauded by people throughout the country from all walks of life.

Dr. Gruber is recognized nationally as the leading expert on standardized tests. It is said that no one in the nation is better at assessing the thinking patterns of how a person answers questions and providing the mechanism to improve faulty thinking approaches.

Gruber's unique methods have been and are being used by the nation's learning centers, by international publications, textbooks, and teaching aids, by school districts throughout the country, in homes and workplaces across the nation, and by a host of other entities.

His goal and mission is to get people's potential realized and the nation "impassioned" with learning and problem solving, so that they don't merely try to get a fast, uncritical answer, but actually enjoy and look forward to solving problems and learning.

For more information on Gruber courses and additional Gruber products, visit www.drgarygruber.com.

Important: Many books do not reflect the current ACT questions. Don't practice with questions that misrepresent the actual questions on the ACT. For example, the math questions created by the test makers are oriented toward allowing you to solve many problems without a calculator as fast as you could with one, and some can be solved faster without a calculator. This book reflects the ACT more accurately than any other commercial book, and the strategies contained in it are exactly those you need to use on the ACT. It is said that only Dr. Gruber has the expertise and ability to provide you with the tools needed for success on the exam far better than any competitor! Don't trust your future to less than the best material.

THE AUTHOR HAS SOMETHING IMPORTANT TO TELL YOU ABOUT HOW TO RAISE YOUR ACT SCORE

What Are Critical-Thinking Skills?

First of all, I believe that intelligence can be taught. Intelligence, simply defined, is the aptitude or ability to reason things out. I am convinced that *you can learn to think logically* and figure things out better and faster, *particularly in regard to ACT questions.* But someone must give you the tools. Let us call these tools *strategies.* And that's what Critical-Thinking Skills are all about—*strategies.*

Learn the Strategies to Get More Points

The Strategy Section (beginning on page 39) will sharpen your reasoning ability so that you can increase your score dramatically on each part of the ACT.

These Critical-Thinking Skills—Part 3's 5 General Strategies and 28 Easy-to-Learn Strategies (including 19 Math Strategies and 9 Reading Strategies)—are used throughout this book. The Explanatory Answers for the 3 Practice Tests in Part 10 direct you to those strategies that may be used to answer specific types of ACT questions. The strategies in Part 3 of this book are usable for more than 90 percent of the questions that will appear on the Math and Reading portions of your ACT. It is obvious, then, that your *learning* and *using* the 33 easy-to-understand strategies in this book will very likely raise your ACT score substantially.

Study the Brief Review of English Grammar

Here (Part 7) you will find the most important grammar rules. If you wish to go into more detail, study the Complete ACT Grammar and Usage Refresher (Part 8).

Study the Mini Math Refresher

If you believe you are weak in basic math skills, study the Mini Math Refresher (Part 5). The material in this section is keyed to the Complete ACT Math Refresher (Part 6) for more thorough instruction.

Take the 101 Most Important Math Questions Test

To see what your weak basic math skills are, take the 101 Most Important Math Questions test (Part 2) and look at the solutions. The questions are keyed to the Complete ACT Math Refresher (Part 6) so you can further brush up on your weak areas for any questions you missed.

The Explanatory Answers to Questions Are Keyed to Specific Strategies and Basic Skills

The Explanatory Answers to the practice tests in this book are far from skimpy—unlike those of other ACT books. Our detailed answers will direct you to the strategy that will help you to arrive at a correct answer quickly. In addition, the math solutions in the book refer directly to the Complete ACT Math Refresher section, particularly useful in case your math skills are rusty.

Lift That ACT Score

By using the material in this book—that is, by taking the tests, learning the specific strategies, and refreshing your basic skills—you should increase your ACT score substantially.

QUESTIONS ASKED ABOUT THE ACT

What Is on the ACT?

The ACT is divided into four parts with an optional Written Essay as a fifth part.

1. The ACT English Test

Seventy-five questions in 45 minutes test standard written English (punctuation, grammar and usage, and sentence structure), development (organization, focus, and cohesion), and rhetorical skills (strategy, organization, and style). Spelling, vocabulary, and rote memory of rules of grammar are not tested. The test consists of five passages, each accompanied by a set of multiple-choice questions. Four scores are reported: a total test score on all 75 questions, along with subscores in three reporting categories: Production of Writing (29%–32%), Knowledge of Language (13%–19%), and Conventions of Standard English (51%–56%). If you spend 1½ minutes skimming through each passage, you will have about 30 seconds to answer each question.

2. The ACT Math Test

Sixty questions in 60 minutes test mathematical skills taken in courses up to grade 12. Nine scores are reported: an overall score for all 60 questions plus scores in eight reporting categories: Preparing for Higher Mathematics (57%–60%)—including subscores in Number and Quantity (7%–10%), Algebra (12%–15%), Functions (12%–15%), Geometry (12%–15%), and Statistics and Probability (8%–12%)—as well as Integrating Essential Skills (40%–43%) and Modeling (>25%).

3. The ACT Reading Test

Forty questions in 35 minutes test your reading comprehension skills. The test comprises four passages, each preceded by a headline that indicates the type of material (e.g., prose fiction, humanities, social studies, natural science). There will be three long prose passages and one passage consisting of two short pieces of prose; in the latter case, some questions may ask you to compare the paired readings. Four scores are reported: an overall score for all 40 questions plus three subscores in Key Ideas and Details (55%–60%), Craft and Structure (25%–30%), and Integration of Knowledge and Ideas (13%–18%). If you spend 2 to 3 minutes reading through each passage, you will have about 35 seconds to answer each question.

4. The ACT Science Test

Forty questions in 35 minutes measure the interpretation, analysis, evaluation, reasoning, and problem-solving skills associated with the natural sciences. The test includes several sets of scientific data and information, each followed multiple-choice questions. Questions test your understanding of the features of, and concepts related to, the information provided (e.g., in graphs, tables, text) as well as your ability to draw conclusions based on that information. Sometimes you will need to draw on your own knowledge based on common high school courses such as biology. Four scores are reported: an overall score based on the 40 questions, plus three subscores: Interpretation of Data (40%–45%), Scientific Investigation (20%–30%), and Evaluation of Models, Inferences, and Experimental Results (25%–35%). Note that you are *not* permitted to use a calculator on the science test. If you spend about 2 minutes reading each passage, then you will have about 30 seconds to answer each question. You may want to spend less time in first reading the passage or looking at the data and refer back to the information when looking at the questions.

5. The ACT Writing Test (Optional)

If you elected to take this 40-minute test, it will not affect your other scores or your composite score. You will be presented with an issue (prompt) and three perspectives on that issue, and you will be asked to

(1) analyze those perspectives, (2) express your own perspective, and (3) relate your perspective to the ones provided in the prompt. The viewpoint you express in your essay will not affect your score. You will receive a composite Writing score of 2–12 plus four "domain" scores: Ideas and Analysis, Development and Support, Organization, and Language Use and Conventions. The image of your essay will be given to your high school and the colleges to which the ACT test scores are reported.

How Long Will the Test Last?

The total time of the four multiple-choice tests will be 2 hours and 55 minutes. There will be a 10- to 15-minute break between tests 2 and 3. Allow 5 hours total (including breaks). If you are taking the Writing Test, you will be given an additional hour.

ACT vs. SAT: How Should I Decide Which Test to Take?

College applicants are often required to take either the ACT or the SAT, depending on the college to which they apply. Check first with the schools you are applying to and find out which test they prefer.

Depending on the school, you may have a choice of whether to take the ACT or the SAT. The correlation between the questions on the ACT and those on the SAT happens to be very high—if you score well on one, you will likely score about as well on the other. They cover a lot of the same material. Both exams test grammar, math, and critical reading skills. However, the ACT includes a whole section on scientific data interpretation (the SAT has a few similar questions in its Math section); fortunately, you don't have to have a scientific background to excel on the ACT.

The ACT is more *memory*-oriented, while the SAT is more *strategy*-oriented. If you memorize quickly and retain facts well under pressure, I recommend the ACT. If you are more prone to strategizing or you like puzzles, I would take the SAT.

What Verbal/Grammar Background Must I Have?

The reading comprehension parts of the test are at the 10th- to 12th-grade level, but strategies presented in this book will help you even if you are at a lower grade level.

What Math Background Must I Have?

The math part will test number/quantity (7%–10% of questions), algebra (12%–15%), functions (12%–15%), geometry (12%–15%), and statistics/probablilty (8%–12%). However, if you use common sense and learn the strategies and thinking skills presented in this book, you don't need to take full courses in these areas. Many of the strategies in this book will help you quickly solve the problems on the test.

What Science Background Must I Have?

The ACT website states that "some of the questions require that the students have discipline-specific content knowledge (e.g., knowledge specific to an introductory high school biology course), but science content is always assessed in concert with science skills and practices." For the most part you simply need to know how to interpret and analyze data presented in these areas.

What Percentage of ACT Study Time Should I Spend Learning Vocabulary Words?

Students should spend perhaps 4 hours at most. To build your word recognition quickly, learn the "Hot Prefixes and Roots" list (page 128).

Should I Take an Administered Actual ACT for Practice?

Yes, but only if you will learn from your mistakes by recognizing the strategies you should have used on your exam. Taking the ACT merely for its own sake is a waste of time and may in fact reinforce bad methods and habits. For some National testing dates, if you take the exam at a National test center you may, for an additional fee, obtain a copy of the test questions, your answers, a list of correct answers, and scoring instructions. To learn more, visit the ACT website at www.act.org.

Should I Be Familiar with the Directions to the Various Items on the ACT before Taking the ACT?

Make sure you are completely familiar with the directions to each of the item types (English, Reading, Math, Science, and Writing). See General Strategy 2, page 40, and for updated information visit the ACT website at www.act.org.

It's Three Days Until the ACT. What Can I Do to Prepare?

Make sure you are completely familiar with the structure of the test, the basic math skills needed, and the basic verbal (including grammar) skills. Take a few practice tests and refresh your understanding of the strategies used to answer the questions.

What Should I Do to Prepare on Friday Night—Cram? Watch TV? Relax?

The ACT exam is given on a Saturday. On Friday night, I would just refresh my knowledge of the structure of the test, some strategies, and some basic skills (verbal, grammar, or math). You want to keep the thinking process going so it is continual right up to the exam. Don't overdo it; just keep it somewhat continuous. This will also relieve some anxiety so you don't feel you are forgetting things before the exam.

What Should I Bring to the Exam on the Test Date?

You should bring the following items with you to the test, and nothing else:

- your paper ticket for the exam
- a few sharpened #2 pencils with erasers
- a photo ID such as a driver license or school ID
- a calculator permitted by the current rules; visit www.actstudent.org
- a watch with no alarm, to pace yourself

Can I Use a Calculator on the Math Portion of the Test?

Students can use a four-function, scientific, or graphing calculator. Note, though, that it is possible to solve every question without the use of a calculator. An updated list of which calculators can be used on the test can be found at the ACT website, www.act.org.

Is Guessing Advisable?

There is no penalty for wrong answers, so you should always guess if you can't answer the question.

The Test Is Given in One Booklet. Can I Skip Between Sections?

No, you cannot skip between the sections. You have to work on one section until the time is called. If you get caught skipping sections or going back to an earlier section, then you risk being asked to leave the exam.

Should I Answer All Easy Questions First and Save Difficult Ones for Last?

I would answer the questions as they are presented to you, but if you find you are spending more than 30 seconds on a question and not getting anywhere, go to the next question. You may, however, find that the more difficult questions are actually easy for you because you have learned the strategies in this book.

Should I Use Scrap Paper to Write on and to Do Calculations?

Scrap paper is prohibited in the test center, but you can use your test booklet (not your answer sheet) to draw or write on. Many of my strategies expect you to label diagrams, draw and extend lines, circle important words and sentences, etc., so feel free to write anything in your booklet. The booklets aren't graded; only the answer sheets are. See General Strategy 4, page 41.

What Is the Most Challenging Type of Question on the Exam and How Do I Attack It?

Many questions, especially at the end of a section on the test, can be challenging. You should always attack challenging questions by using a specific strategy or strategies and common sense.

What Are the Most Crucial Strategies?

All specific verbal and math strategies are crucial, including the general test-taking strategies described on pages 40–41, regarding guessing, writing and drawing in your test booklet, and being familiar with question-type directions. The key reading strategy is to know the four general types of questions that are asked in reading—main idea, inference, specific details, and tone or mood. Important math strategies include the translations strategy—words into numbers, drawing of lines, etc.

How Is the Test Scored?

Each test (English, Math, Reading, and Science) will have a scale score from 1 to 36. A composite score will be the total scale score from all four tests, divided by four. There will also be subscores as described before.

Can I Take the Test More than Once? Will All My Scores Be Reported to the Schools to Which I'm Applying? How Will My Scores Be Used?

Check with the schools to which you are applying to see how they use the reported scores—whether they average them, whether they take the highest, etc. Ask each school whether it sees unreported scores. If so, find out how the individual school deals with single and multiple unreported scores.

How Do Other Exams Compare with the ACT? Can I Use the Strategies and Examples in This Book for Them?

Many other exams are like the ACT, so the strategies here are definitely useful when taking them. The ACT is less strategy-oriented and more memory-oriented than the SAT, but the strategies in this book will certainly be useful. If you are taking the SAT, however, you should get the book that deals directly with the SAT: *Gruber's Complete New SAT Guide*, 20th edition.

How Does the Gruber Preparation Method Differ from Other Programs and Guides?

Many other ACT programs try to use quick-fix methods or subscribe to memorization. These quick-fix methods can be detrimental to effective preparation because the ACT designers constantly change questions to prevent "gimmick" approaches. Rote memorization methods do not enable you to answer a variety of questions that appear in the ACT exam. In more than thirty years of writing preparation books for standardized tests such as the SAT and ACT, Dr. Gruber has developed and honed the critical-thinking skills and strategies that are based on all standardized tests' construction. So, while his method immediately improves your performance on the ACT, it also provides you with the confidence to tackle problems in all areas of study for the rest of your life. Remarkably, he enables you to look at a problem or question without panic, extract something curious or useful from it, and move to the next step and finally to a solution, without rushing into a wrong answer or being lured into a wrong choice. It has been said that test taking through his methodology becomes enjoyable rather than painful.

WHAT ARE CRITICAL-THINKING SKILLS?

Critical-Thinking Skills are general skills for finding the most creative and effective way of solving a problem or evaluating a situation. The most effective way of solving a problem is to extract some piece of information or observe something curious from the problem, and then use one or more of the specific strategies or Critical-Thinking Skills—together with basic skills or information you already know—to get to the next step in the problem. This next step will catapult you toward a solution with further use of the specific strategies or thinking skills.

1. ***Extract or observe something curious.***
2. ***Use specific strategies together with basic skills.***

These specific strategies will enable you to "process" think rather than just be concerned with the end result; the latter usually produces a fast, rushed, and wrong answer. The Gruber strategies have been shown to make test takers more comfortable with problem solving and to make the process enjoyable. The skills will last a lifetime, and you will develop a passion for problem solving. These Critical-Thinking Skills show that conventional "drill and practice" is a waste of time unless the practice is based on these generic thinking skills.

Here's a simple example of how these Critical-Thinking Skills can be used in a math problem:

Which is greater, $7\frac{1}{7} \times 8\frac{1}{8} \times 6\frac{1}{6}$ or $8\frac{1}{8} \times 6\frac{1}{6} \times 7$?

Long and tedious way: Multiply $7\frac{1}{7} \times 8\frac{1}{8} \times 6\frac{1}{6}$ and compare it with $8\frac{1}{8} \times 6\frac{1}{6} \times 7$.

Error in doing the problem the "long way": You don't have to *calculate;* you just have to *compare,* so you need a *strategy* for *comparing* two quantities.

Critical-Thinking way:

1. *Observe:* Each expression contains $8\frac{1}{8}$ and $6\frac{1}{6}$.
2. *Use strategy:* Since both $8\frac{1}{8}$ and $6\frac{1}{6}$ are just weighting factors, like the same quantities on both sides of a balance scale, just *cancel* them from both multiplied quantities above.

   You are then left comparing $7\frac{1}{7}$ with 7, so the first quantity, $7\frac{1}{7}$, is greater. Thus $7\frac{1}{7} \times 8\frac{1}{8} \times 6\frac{1}{6}$ is greater than $8\frac{1}{8} \times 6\frac{1}{6} \times 7$.

Here's a simple example of how Critical-Thinking Skills can be used for a verbal problem:

If you see a word such as *delude* in a sentence or in a reading passage, you can assume that the word *delude* is negative and probably means "taking away from something" or "distracting," since the prefix *de-* means "away from" and thus has a negative connotation. Although you may not get the exact meaning of the word (in this case the meaning is to "deceive" or "mislead"), you can see how the word may be used in the context of the sentence in which it appears, and thus get the flavor or feeling of the sentence or paragraph.

Notice that the Critical-Thinking approach gives you a fail-safe and exact path to the solution without superficially trying to solve the problem or merely guessing at it. This book contains all the Critical-Thinking Strategies you need to know for the ACT test.

Dr. Gruber has researched hundreds of ACT tests (thousands of ACT questions) and documented 33 Critical-Thinking Strategies (all found in this book) common to every test. These strategies can be used for any math, reading, or logical reasoning problem.

In short, you can learn how to solve a specific problem and thus find how to answer that problem, or you can learn a powerful strategy that will enable you to answer hundreds of problems.

QUESTIONS RECENTLY ASKED OF DR. GRUBER IN INTERVIEWS

How Did You Get Started in Test Prep? Do You Still Personally Train Students?

When I was in fifth grade, I scored 90 (below average) on an IQ test. My father, who was a high school teacher at the time, was concerned, so he was able to get me an IQ test, hoping I could study it and increase my score. However, when I looked at the test, I was so fascinated with what the questions were trying to assess, I started to figure out what strategies and thinking could have been used for the questions and saw interesting patterns for what the test maker was trying to test.

I increased my IQ to 126 and then to 150. The initial experience of scoring so low on my first IQ test and being branded as "dull minded" actually sparked my fascination and research with standardized tests. I was determined to help all other students obtain my knowledge and experience so they would be able to reach their full potential, as I had. So I constantly write books, newspaper and magazine articles and columns, and software, and I personally teach students and teachers.

What Is the "Gruber Method" and How Does It Differ from Other Test Prep Methods?

The unique aspect of my method is that I provide a mechanism and process whereby students internalize the use of the strategies and thinking skills I've developed and honed over thirty years. The method reinforces those strategies and skills so that students can answer questions on the ACT or SAT without panic or brain-racking. This is actually a fun process. The Gruber Method focuses on the students' patterns of thinking and how each student should best answer the questions. I have even developed a nationally syndicated test—the only one of its kind—that actually tracks a student's thinking approach to the ACT (and SAT) and directs the student to the exact strategies necessary for him or her to learn. Instead of just learning how to solve one problem at a time, if you learn a Gruber strategy you can use it to solve thousands of problems.

What Advice Can You Give to Students Suffering from Test Anxiety?

I find that when students learn specific strategies, they see how a strategy can be used for a multitude of questions. And when they see a question on an actual ACT that uses the strategy, it reinforces their self-confidence and reduces their sense of panic. Students can also treat the ACT as a game by using my strategic approaches, and this also reduces their anxiety.

Should Students Take the ACT or the SAT?

The correlation happens to be very high for both tests, so if you score well on one, you will score similarly on the other. The material is about the same; for example, there is grammar on both tests. Math is about the same, except the ACT is less strategically oriented. There is reading on both tests, and those sections test about the same things. However, on the ACT there is a whole section on scientific data interpretation (the SAT has some questions on this topic in the math section). And the ACT is more memory-oriented than the SAT. If you are more prone to using memory, I would take the ACT. If you are more prone to strategizing or if you like puzzles, I would take the SAT. In any event, I would check with the schools to which you're applying to find out which test they prefer.

What Is the Single Most Important Piece of Advice You Can Give to Students Taking the ACT or SAT?

Learn some specific strategies, which can be found in my books. This will let you think mechanically without racking your brain. When answering the questions, don't concentrate on or panic about finding the answer. Try to extract something in the question that is curious and/or will lead you to the next step in the question. Through this, you will process the question, enabling you to reach an answer.

What Is the Single Most Important Piece of Advice You Can Give to Tutors Teaching the ACT or SAT?

Make sure you learn the strategies. Teach students those strategies by using many different questions that employ each strategy, so students will see variations on how each particular strategy is used.

What Recommendations Can You Give to Tutors Who Want to Use Your Books in Their Test-Prep Programs?

Read "A 4-Hour Study Program for the ACT" on page xxiii. You can use the information there to create a program for teaching students. Always try to reinforce the strategic approach in which students hone and internalize strategies so they can use them for multitudes of questions.

Apparently, Very Few People Know the Answer to This Important Question: When Should Students Take the SAT or ACT?

Students should find out from the school to which they are applying the preferred test dates for the ACT or SAT that they need to register for. However, students who want to take the ACT or SAT for practice should take it only on the test dates for "disclosed" exams—which means that the test answers and the students' answers are given back to them. For the ACT, check www.act.org. For the SAT, check out the College Board's website, www.collegeboard.org. After getting the test and the results for each question back, students can learn from their mistakes by going through the questions they got wrong and then working on the strategies and basic skills they could have used to solve those questions.

PART 1

The World's Shortest Practice Test for the ACT Exam

20 Questions to Approximate Your ACT Score

And the Exact Strategies You Need to Improve Your Score

Although it shouldn't take you more than approximately 40 seconds to answer each question, you may take this test untimed and still get a fairly accurate prediction of your ACT score.

The top schools require ACT scores of around 27. Following is a test that can determine if you have the goods—and it won't take you more than 20 minutes.

Note: In the actual ACT test, the Math Section has 5 choices, and all the other sections (English, Reading, and Science) have 4 choices.

ANSWER SHEET

Complete Mark ● **Examples of Incomplete Marks** ⊘ ⊗ ⊖ ◔ ◐ ◌ ◑ ●

ENGLISH

	A	B	C	D
1	○	○	○	○
2	○	○	○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○

MATHEMATICS

	A	B	C	D	E
1	○	○	○	○	○
2	○	○	○	○	○
3	○	○	○	○	○
4	○	○	○	○	○
5	○	○	○	○	○

READING

	A	B	C	D
1	○	○	○	○
2	○	○	○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○

SCIENCE

	A	B	C	D
1	○	○	○	○
2	○	○	○	○
3	○	○	○	○
4	○	○	○	○
5	○	○	○	○

ENGLISH TEST

4 Minutes

Questions 1–5 are based on the following passage.

This passage is from Rachel Carson's The Sea Around Us, *1950.*

(1) Sometimes the meaning of glowing water is ominous. (2) On the Pacific Coast of North America, it may mean that the sea is filled with . . . a minute plant that contains a poison of strange and terrible virulence (3)—about four days after this minute plant comes to dominate the coastal plankton, some of the fishes and shellfish in the vicinity become toxic. (4) This is because in (5) their normal feeding, they have strained the poisonous plankton out of the water.

Questions

1. Which sentence could appear as the sentence preceding the first sentence of this passage?
   (A) The sea has many interesting attributes.
   (B) The Pacific coastline is frightening.
   (C) Ships sometimes take southern routes to avoid bad weather conditions.
   (D) There are strange plants in the sea.

2. (A) NO CHANGE
   (B) Off
   (C) Apart from
   (D) Not from

3. (A) NO CHANGE
   (B) . About four days
   (C) ; about four days
   (D) , about four days

4. At this point the author is considering adding the following true statement right before the last sentence: "The fishes and shellfish die soon after." Should the author make this addition here?
   (A) No, because this destroys the connection between the last sentence and the preceding one.
   (B) No, because there is too much of a leap from "toxicity" to "death."
   (C) Yes, because it follows that if fish are toxic they will soon die.
   (D) Yes, because this qualifies the last sentence and puts it in its right place.

5. (A) NO CHANGE
   (B) they're
   (C) its
   (D) it's

MATHEMATICS TEST

6 Minutes

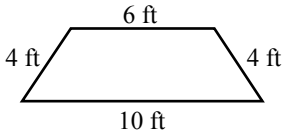
1. Given the functions $f(x) = \sqrt{x + 1}$ and $g(x) = 6x + a$, in the xy-coordinate plane, $y = f[g(x)]$ passes through the point (3,5). What is the value of a?

   (A) 6
   (B) -6
   (C) 18
   (D) -18
   (E) $6 + 4\sqrt{7}$

2. If a and b are consecutive integers such that $a > b$, then:

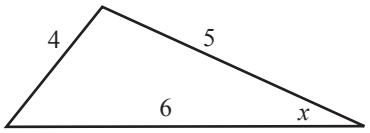
   (A) a is even
   (B) b is even
   (C) $a - b$ is even
   (D) $a^2 - b^2$ is even
   (E) $a^2 + b^2$ is odd

3. What is the distance between the parallel sides of the isosceles trapezoid shown below if the parallel sides are 6 feet and 10 feet and the nonparallel sides are both 4 feet?



   (A) 2
   (B) $2\sqrt{2}$
   (C) $2\sqrt{3}$
   (D) $3\sqrt{2}$
   (E) $3\sqrt{3}$

4. In the triangle shown below, with sides 4, 5, and 6, what is cos x?



   (A) $\frac{6}{5}$
   (B) $\frac{2}{3}$
   (C) $\frac{3}{4}$
   (D) $\frac{4}{5}$
   (E) $\frac{3}{\sqrt{6}}$

5. Three students are in an honors class. Each student scores 85% on a test. The teacher of the class would like to bring up the average class score to 90%. She lets one of the students retake the test. What is the score the student must make on the retake test in order to bring the average class score to 90%?

   (A) 90%
   (B) 92%
   (C) 96%
   (D) 98%
   (E) 100%

READING TEST

5 Minutes

Questions 1–5 are based on the following passage, *A Contrast between Homeschooling and Classroom Schooling*.

Homeschooling is becoming more and more desirable because children do not have the burden of traveling to school and becoming exposed to other children's sickness and everything else that goes with being in a crowded room. There is also the individual attention that the parent or tutor can give the student, which creates a better and more efficient learning environment. Many educators believe that as standards become more and more flexible, homeschooling may in fact be the norm of the future.

However, in many studies, it has been shown that students benefit in a classroom setting, since the interaction and dialogue with other students creates a stimulating learning environment. The more students who are in a class, the more diversity within the group and the more varied the feedback. With a good teacher and facilitator, a classroom can be very beneficial for the student's cognitive development. So there are advantages and disadvantages in the different methods of schooling. Further studies should be carried out to determine the pros and cons to each method.

Questions

1. In homeschooling, the optimal condition for an effective learning environment is based on
   (A) the closeness of a parent and child
   (B) the reduction of travel time
   (C) a one-to-one learning experience
   (D) the sanitary conditions in the learning environment

2. Which of the following is not addressed by the author's discussion of classroom schooling?
   (A) The advantage of classroom learning with the student interacting and sharing ideas with other students.
   (B) The student's being exposed to multicultural approaches to the learning experience.
   (C) The greater number of students in the classroom leading to more feedback for each student.
   (D) The positive relationship between the different types of students and learning.

3. Which criterion is the same in homeschooling and regular classroom schooling?
   (A) the health conditions
   (B) the feedback from other students
   (C) the diversity of the students
   (D) the learning experience

4. Which of the following adjustments would make an ideal environment for learning, according to what is addressed?
   (A) In homeschooling, the student could travel on weekends to cultural areas.
   (B) In school, the teacher could occasionally work with students on an individual basis.
   (C) In homeschooling, the student could be exposed to interaction with other students on a regular basis.
   (D) The student can spend one-half of his educational time in school and one-half of his educational time at home.

5. Which statement would the author of this passage agree with?
   (A) Homeschooling provides much more of a learning experience than classroom schooling.
   (B) Classroom schooling provides much more of a learning experience than homeschooling.
   (C) Neither homeschooling nor classroom schooling is effective in learning.
   (D) It is not known which is more effective—classroom schooling or homeschooling.

SCIENCE TEST

5 Minutes

The definition of *density* is *mass divided by volume*. That is,

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

Table 1 contains the phases and densities, expressed in grams per cubic centimeter $\left(\frac{\text{g}}{\text{cm}^3}\right)$, of a variety of pure substances at a temperature of 25° C and at a pressure of 1 atmosphere.

Table 1

Substance	Phase	Density $\left(\frac{\text{g}}{\text{cm}^3}\right)$
Arsenic	solid	5.73
Glucose	solid	1.56
Iron	solid	7.86
Lead	solid	11.34
Zinc	solid	7.14
Ethanol	liquid	0.79
Ethyl ether	liquid	0.71
Glycerol	liquid	1.26
Mercury	liquid	13.59
Freon-12	gas	0.00495
Krypton	gas	0.00343
Methane	gas	0.00065

Figure 1

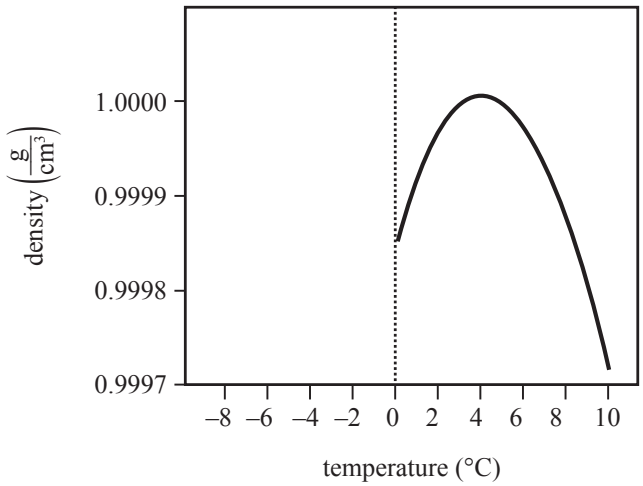


Figure 1 describes how the density of liquid water changes with temperature.

Figure 2

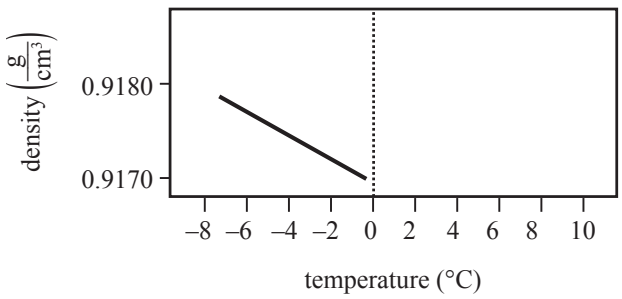


Figure 2 shows how the density of solid water changes with temperature.

Figures adapted from John C. Kotz and Keith F. Purcell, *Chemistry & Chemical Reactivity*, 1987.

Questions

1. As the temperature of liquid water increases from 0° C to 10° C, the density

   (A) can be more than 1.0 $\frac{g}{cm^3}$
   (B) increases, then decreases
   (C) increases only
   (D) decreases, then increases

2. A chemist concludes that the mass of 1 cm^3 of any liquid is greater than the mass of 2 cm^3 of any gas. Which liquid and gas from Table 1 support this conclusion?

   (A) Mercury, methane only
   (B) Mercury, Freon-12 only
   (C) All of the liquids and gases
   (D) None of the liquids and gases

3. As water increases in temperature from solid through liquid, its density

   (A) first decreases, then increases, then decreases
   (B) first increases, then decreases
   (C) decreases only
   (D) increases only

4. At 25° C, equal amounts of ethanol, glycerol, and water of density 0.9971 $\frac{g}{cm^3}$ are poured into a cylindrical flask. Layers of each compound form in the flask. Which of the following represents the order from highest level to lowest level of the compounds in the flask, according to Table 1?

   (A) Ethanol
   Glycerol
   Water
   (B) Ethanol
   Water
   Glycerol
   (C) Glycerol
   Water
   Ethanol
   (D) Glycerol
   Ethanol
   Water

5. Referring to Figure 1, at 4° C, 200 grams of water would completely fill a container of what volume?

   (A) 100 cm^3
   (B) 200 cm^3
   (C) 300 cm^3
   (D) 400 cm^3

ANSWERS

English Test

1. A
2. B
3. B
4. A
5. A

Reading Test

1. C
2. B
3. D
4. C
5. D

Mathematics Test

1. A
2. E
3. C
4. C
5. E

Science Test

1. B
2. C
3. A
4. B
5. B

SCORING

Your Score Here:	*Translates to This Score on the Actual ACT:*			
Number of Correct Answers for Each Part	**Math ACT**	**English ACT**	**Reading ACT**	**Science ACT**
1	16–25	7–12	10–13	10–13
2	26–31	13–19	14–19	14–19
3	32–33	20–25	20–26	20–26
4	34–35	26–34	27–33	27–33
5	36	35–36	34–36	34–36

EXPLANATORY ANSWERS

With Important Strategies

English Test

1. Choice A is correct. In a passage, we start generally, then discuss specifics. Choice B is incorrect. We are discussing the sea, not the Pacific coastline. Choice C is incorrect. There is no direct connection between this sentence and the first sentence in the passage. Choice D is incorrect. Plants are discussed later in the passage, so the first sentence about plants would not be appropriate here.

   Strategy: Know How to Connect Sentences in a Passage.

2. Choice B is correct. We are talking about something away from, or "off," the Pacific coast. Choice A is incorrect. We are not talking about something on the coast—we are talking about something in the water *off* the coast. Choice C is incorrect. We are not contrasting the coast and the sea, so we do not use the word *apart*. Choice D is incorrect. "Not from" does not make sense here, since we eventually talk about the sea.

   Strategy: Know How to Use Appropriate Words to Describe Something.

3. Choice B is correct. We need a new sentence here, because something new is discussed. Choice A is incorrect. The dash is not appropriate since the part is not directly linked to the preceding part—a new idea is discussed. Choice C is incorrect. The semicolon is not appropriate since a new idea is discussed here. Choice D is incorrect. The comma would create a run-on sentence.

   Strategy: Know How to Use Punctuation to Link Parts of the Passage.

4. Choice A is correct. We need to maintain a connection here—when it says the fish become toxic, we need another sentence immediately following this one explaining why they become toxic. Choice B is incorrect. There is not too much of a leap from "toxicity" to "death." Choice C is incorrect. This may be so, but inserting the sentence would destroy a connection, as described before. Choice D is incorrect. This is not true since a connection would be destroyed between the last sentence and the one preceding.

   Strategy: Know When and How to Make Connections by Using Another Sentence.

5. Choice A is correct. Since we mean more than one, we use *their*. Choice B is incorrect. *They're* means "they are," which does not make sense. Choice C is incorrect. Since we are referring to more than one, we do not use *its*. Choice D is incorrect. *It's* means "It is," which does not make sense.

   Strategy: Know What to Use When We Are Talking about Quantity.

Mathematics Test

1. Choice A is correct. Since $y = f[g(x)]$ and $g(x) = 6x + a$, $y = f(6x + a)$. But $f(x) = \sqrt{x + 1}$, so $y = f(6x + a) = \sqrt{6x + a + 1}$. If $y = f[g(x)]$ passes through (3,5), then $5 = f[6(3) + a] = \sqrt{6(3) + a + 1} = \sqrt{18 + a + 1} = \sqrt{19 + a}$. Thus $5 = \sqrt{19 + a}$. Square both sides: $25 = 19 + a$; $a = 6$.

2. Choice E is correct.

   Math Strategy 8: When Each Choice Must Be Tested, Start with the Last Choice and Work Backward

   Math Strategy 4: Remember Classic Expressions

   Method I:

   You could try integers for a and b like $a = 4$ and $b = 3$ (making sure that $a > b$). Then you would test out the choices using Math Strategy 8. So for Choice E, $4^2 + 3^2 = 16 + 9 = 25$, which is

odd. You may want to try another set of numbers like $a = 3$ and $b = 2$. So you would get for Choice E, $3^2 + 2^2 = 13$. You would be on safe ground to choose E, but frankly I wouldn't bet my life on it! You could perhaps go on to Choice D, trying $a = 4$ and $b = 3$. You get $4^2 - 3^2 = 7$. So Choice D is ruled out. Go to Choice C: $a - b = 4 - 3 = 1$. Choice C is ruled out. Now go to Choice B: $b = 3$ so Choice B is ruled out. Now for Choice A: a is even if $a = 4$. But of course a could have been 3 and b could have been 2, so Choice A would be ruled out and only Choice E remains (which is the correct one).

But let's look at a much more powerful and general method:

Method II:

Since a and b are consecutive integers, with $a > b$, then $a = b + 1$. So using Math Strategy 8 (Choice E), we have, substituting $a = b + 1$ for a, and using Math Strategy 4, $(x + y)^2 = x^2 + 2xy + y^2$, where $b = x$ and $1 = y$, we get $a^2 + b^2 = (b + 1)^2 + b^2 = b^2 + 2b + 1 + b^2 = 2b^2 + 2b + 1$.
Now we factor out the common 2 and get $a^2 + b^2 = 2(b^2 + b) + 1$.

Since $2(b^2 + b)$ is even (an integer multiplied by 2), when added to 1, you get an odd integer. Therefore, Choice E is correct.

Method III:

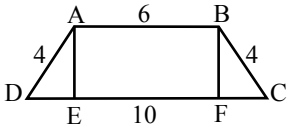
Here's a method to use if you are familiar with properties of integers. For Choice E we have $a^2 + b^2$ is odd. Now suppose a is odd. Then b must be even, since b is 1 less than a. Thus a^2 is odd and b^2 is even. $a^2 + b^2 =$ odd + even = odd.

Suppose, though, that a is even. Then b is odd, since b is 1 less than a. Then a^2 is even and b^2 is odd. So $a^2 + b^2$ is odd. Thus Choice E is correct.

3. Choice C is correct.

Math Strategy 14: Draw or Extend Lines to Make a Problem Easier

Math Strategy 3: Know How to Find Unknown Quantities from Known Quantities



You can see that $AE = BF$. Also you can see that $AB = EF = 6$. Using Math Strategy 3, we get $DC - AB = DE + FC$. Since $DC = 10$ and $AB = 6$, $DC - AB = DE + FC = 4$. But because of the symmetry of the isosceles trapezoid, $DE = FC$, so $DE = FC = 2$.

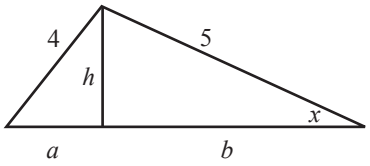
Now by the Pythagorean theorem,
$AD^2 = DE^2 + AE^2$, so
$16 = 4 + AE^2$
$12 = AE^2$

$\sqrt{12} = AE$; $\sqrt{4 \times 3} = AE$; $\sqrt{4} \times \sqrt{3} = 2 \times \sqrt{3} = AE$.

4. Choice C is correct.

Math Strategy 14: Draw or Extend Lines to Make a Problem Easier

Math Strategy 4: Remember Classic Expressions



Draw a perpendicular line to the base.

Using the Pythagorean theorem,

$$a^2 + h^2 = 4^2 \quad (1)$$
$$b^2 + h^2 = 5^2 \quad (2)$$

Subtracting (1) from (2): $b^2 - a^2 = 5^2 - 4^2 = 9$

Using Math Strategy 4:

$b^2 - a^2 = (b + a)(b - a) = 9$. But $b + a = 6$ (given), so $6 \times (b - a) = 9$; $b - a = \frac{9}{6} = \frac{3}{2}$. Since $b + a = 6$ and $b - a = \frac{3}{2}$, adding equations, $2b = 6 + \frac{3}{2} = \frac{15}{2}$, $b = \frac{15}{4}$. Thus $\cos x = \frac{b}{5} = \frac{15}{20} = \frac{3}{4}$.

5. Choice E is correct.

Math Strategy 5: Know How to Manipulate Averages

Know what "average" means:

$\frac{(85 + 85 + x)}{3} = 90$. Multiply by 3 to get rid of the fraction. $85 + 85 + x = 270$; $170 + x = 270$; $x = 100$.

Reading Test

1. Choice C is correct. Watch for *key phrases*. See lines 5–8: "individual attention . . . which creates a . . . more efficient learning environment." What is in all other choices may sound right because they are all mentioned, but an effective learning environment is not based upon them.
2. Choice B is correct. Choice A is addressed in lines 13–14. Choice C is addressed in line 16 ("varied the feedback"), and Choice D is addressed in line 15 ("diversity"). But for Choice B, multicultural ways are *not* mentioned, as students could all be of one culture.
3. Choice D is correct. The criterion that appears in both passages is the learning experience. See the second sentence (lines 5–8) and lines 11–14. The other choices are incorrect because the criterion presented in each choice is not present in both homeschooling and classroom schooling.
4. Choice C is correct. What is missing in homeschooling is the interaction with other students, as stated in lines 11–14. Thus interaction with students on a regular basis would fill the void. Note in Choice B, the "occasional" work may not be adequate. In Choice D, for students spending one-half of their time at home and one-half in school, it may be difficult and awkward to coordinate or relate what is taught or developed at home and what is taught or developed at school. Choice A is incorrect because traveling to cultural areas on weekends would not really create much more of an ideal environment for learning.
5. Choice D is correct. See the last sentence (lines 20–21).

Science Test

1. Choice B is correct. As you can see from Figure 1, the graph first goes up, then reaches a high point at density 1.0 $\frac{g}{cm^3}$, then goes down. Choice A is incorrect because the high point of the graph is at 1.0 $\frac{g}{cm^3}$.
2. Choice C is correct. In Table 1, the mass of 2 cm^3 of Freon-12, krypton, and methane are, respectively, 0.00495 × 2, 0.00343 × 2, and 0.00065 × 2. You can see that these are all less than 0.10. This is less than the mass of 1 cm^3 of ethanol, ethyl ether, glycerol, and mercury, which are, respectively, 0.79, 0.71, 1.26, and 13.59. Thus, all of the liquids and gases support the chemist's conclusion.
3. Choice A is correct. In Figure 2, we see that in water's solid form, as the temperature increases from −8 to 0° C, the density decreases from 0.9180 to 0.9170. In Figure 1, in water's liquid form, as the temperature increases from 0° to 10° C, the density increases to 1.0, then decreases. Choice B is incorrect. Don't just look at Figure 1—that is just based on liquid water. Choice C is incorrect. Don't just look at Figure 2—that is just based on solid water.
4. Choice B is correct. The greater the density, the further down in the flask the compound will be. According to Table 1, the density of ethanol is 0.79; of glycerol, 1.26; and the density of water is given as 0.9971. Thus, the configuration in Choice B fits the criterion.
5. Choice B is correct. According to Figure 1, at 4° C, the density of liquid water is approximately 1.0000 $\frac{g}{cm^3}$. So 200 grams would occupy 200 cm^3.

DR. GARY GRUBER

For over 40 years, Dr. Gruber has been recognized nationally as the leading expert on standardized tests and originator and developer of the critical-thinking skills necessary for use on them. It is said that no one is better at assessing the thinking patterns of "how" a person answers questions and providing the mechanism to improve faulty thinking approaches.

Dr. Gruber's Mission

Dr. Gruber's lifelong mission has been to get the nation to be passionate about problem solving and to develop and hone critical-thinking abilities to last a lifetime.

Dr. Gruber's Story

In fifth grade Dr. Gruber received a 90 IQ score (below average). His father, a high school teacher at the time, was concerned but able to get a copy of the IQ test. His hope was that his son could study and increase his score. However, when the young Gruber looked at the test he became fascinated with what exactly the questions were trying to assess. As he attempted to figure out which strategies and thinking skills he should have used the first time around, he quickly uncovered an interesting pattern. Two years later, when his IQ was again tested, Gruber had increased his score to 126. Several years later that score soared to 150 (genius level). Later, *The Washington Post* would call him "America's Super Genius."

The initial experience of scoring so low on his first IQ test and being branded "dull-minded" actually spurred his fascination with standardized tests. He became determined to afford all other students the knowledge and experience he had gained so that they might show their true potential. Dr. Gruber continues to write books, newspaper articles, magazine articles, and columns. He also continues to personally teach students and teachers his innovative test-taking techniques.

Dr. Gruber's Achievements

Dr. Gruber's SAT score improvements with students have been documented to be the highest in the nation. His unique methods have been used by the Public Broadcasting Service (PBS), Sylvan Learning Centers, and Grolier's encyclopedias, and his techniques continue to be used by school districts throughout the country, in homes and workplaces across the nation, and by a host of other entities. PBS observed that he spreads contagious enthusiasm to his audiences. Most recently he has trained the University of California's teachers to create programs for specific critical-thinking and problem-solving skills for the minority programs. Holding a doctorate in physics, Dr. Gruber has published more than 40 books with major publishers on test-taking and critical-thinking methods, with more than 7 million copies sold. At one point, three of his books were listed among the 30 top-selling trade paperback books in the nation. His books have been translated into Chinese, Russian, and Korean.

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Dr. Gary Gruber is nationally recognized as the leading expert on test prep, test-taking methods, and critical-thinking skills. His acclaimed books have sold more than 7 million copies. Visit drgarygruber.com.

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This book is different.

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