

READ THIS FIRST!! Special Report: Strategies for the GRE CAT

All students who take the GRE in America will take the CAT (Computer Adaptive Test) version of the test. The CAT format is a major development in the field of standardized testing that calls for a unique approach. I've done a fair amount of research into the behavior of the CAT and I urge you to read this section of the Strategy Guide carefully—outside of this Strategy Guide, I have never read a discussion of the CAT's design that gets it exactly right.

How the GRE CAT is Supposed to Work

The idea behind the GRE CAT is relatively simple. On the old paper-based GRE, a student's score was determined by the number of questions that were answered correctly or incorrectly. This is similar to the way the SAT and ACT were scored when you were in high school.

But on the CAT, the actual number of questions you answer correctly or incorrectly is NOT what ultimately determines your score. How can this be? Well, as a general rule, the GRE CAT tries to give you harder questions when you answer questions correctly, and easier questions when you answer questions incorrectly. The idea here is that, instead of giving every student a lot of questions and evaluating everyone's performance on every question, the GRE CAT actually tries to "calibrate" each individual student's score by deliberately selecting a smaller number of questions to present to that individual, based on the individual's performance.

That might sound a little complicated, so let's look at it a different way. Imagine that you're trying to guess someone's birthday. You might start out by guessing July 2nd, which is the date exactly in the middle of the calendar year. If you're told that the person's birthday is after July 2nd, you might guess October 1st. If the birthday turns out to be earlier than October 1st, you might guess August 16th. By continuing to guess earlier or later based on the responses you receive, you would eventually arrive at the correct date. This is essentially what the GRE CAT tries to do with your score—it tries to calibrate the score you deserve by asking you a series of questions. The more you answer questions correctly, the more likely you are to receive harder questions; the more you answer questions incorrectly, the more likely you are to receive easier questions. In this way, the GRE CAT can determine the score you deserve in much less time than the paper-based test would require. Remember, on the GRE CAT it's all about calibration, not about the actual number of right and wrong answers you give.

As you can see, the idea behind the GRE CAT is pretty simple, and it would save test-takers a lot of time and produce more reliable scores if it worked in real life.

Unfortunately for the ETS, it doesn't.

Problems with the GRE CAT

Although the GRE CAT seems to provide a quick and ingenious way to assign GRE scores to test-takers, there are a few problems with the way the ETS actually developed the test.

The first major flaw of the GRE CAT is that it decides which questions to show to an individual test-taker based on the idea of question “difficulty.” The problem here, of course, is that difficulty is a hard thing to measure. The ETS says that it determines question difficulty by measuring the percentage of students who get a question right during its pre-testing. If 90% of students got a question right when it was being tested, then the question is relatively easy. If only 20% of students got a particular question right, then the question is relatively difficult. That seems simple enough, right?

But here’s the problem with that way of thinking. On the GRE CAT, the questions that are more likely to be answered incorrectly by more students tend to have certain things in common. For example, in the math section, related-quantity questions about negative fractions tend to appear more often when students have answered a lot of questions correctly, because most students get those questions wrong; straightforward geometry questions tend to appear when you’ve answered a lot of questions incorrectly, because most test-takers get them right. But if you’re better at comparing negative fractions than you are at doing geometry, the GRE CAT will actually become easier and easier as you get more questions right. This, of course, is exactly the opposite of what the test was designed to do. On the old paper-based GRE, you would have had to answer questions the ETS considers easy and questions it considers hard. But on the GRE CAT, you can theoretically finish an entire section without seeing a lot of questions of a particular type. The result is that a student whose abilities differ from the abilities of the majority of test-takers will probably do significantly better or worse on the GRE CAT than on the paper-based GRE.

Another major problem with the GRE CAT is that there seems to be some randomness in the way it decides which questions to show a test-taker. When I tested the GRE POWERPREP software (see *Special Report: Using ETS Materials to Prepare for the GRE* in this Guide to learn where you can download GRE POWERPREP for free) I found many instances where two identical test-taking performances resulted in the appearance of different questions in different orders, and received vastly different final scores. For example, in one trial I answered the first 16 questions of a verbal test correctly and the remaining 14 questions incorrectly and received a score of 530. In another trial I again answered the first 16 questions correctly and the remaining 14 incorrectly, and received a score of 390. In other words, the questions that the test gives you are not determined solely by your performance. In fact, in my testing I found that the very first question in a section isn’t always the same question!

Both of these problems taken together add up to the larger problem that, for all practical purposes, no two students sitting in the same test center on the same day answer exactly the same set of questions. In other words, the GRE CAT is not “standardized” in the same way that a paper-based test would be. It isn’t really as fair a test as the SAT and ACT were when you took them in high school.

(Many people might argue that the GRE CAT is every bit as standardized as a paper-based test because the results come out roughly the same way. That is, the GRE CAT produces roughly the same score distribution as the paper-based test did. This

argument misses the point, though. The question isn't whether the GRE CAT produces a reliable score distribution, but (a) whether the individual students who score well on the GRE CAT are the same individual students who would score well on the paper-based test; (b) whether high and low scores can even be properly compared, since the test-takers who achieve them don't answer the same types of questions; and (c) whether, ultimately, the GRE CAT tests and rewards the types of behaviors that graduate schools want in their applicants as effectively as the paper-based test did.)

Of course, whether the GRE CAT is a well-designed test is irrelevant if you're applying to grad school—all that matters to you is that you get the highest score on it that you can. The rest of this Strategy Guide will lay out specific ways to attack individual questions, but first we need to talk about ways to exploit the poor design of the GRE CAT as a general matter.

How the GRE CAT Actually Works

Most people will tell you that the GRE CAT gives you a harder question after you mark a correct answer and an easier question after you mark an incorrect answer. But if you sit down and play with the sample GRE CATs provided in the POWERPREP software, you'll see that this standard piece of advice just isn't true. If you answer a lot of questions correctly in the beginning, you'll continue to be shown more "difficult" questions all the way through the end of the section. Conversely, if you answer most of the questions incorrectly in the beginning, you'll continue to be shown "easy" questions. So what actually happens?

To answer that question, let's take a look at the table labeled "Score Results from Various Performances on the Verbal Section of the GRE CAT," which appears in Appendix A. You'll see the results from 72 different performances on the Verbal section of Practice Test 1 from the ETS's free GRE POWERPREP software.

Look at trials 24 and 36 from the table. In trial 24, the first 24 questions were answered correctly and the last 6 were answered incorrectly. Trial 36 reverses this, answering the first 6 questions incorrectly and the remaining 24 correctly. As you can see, trial 24 resulted in a score 300 points greater than trial 36, even though the number of right and wrong answers was the same.

Now look at trials 67, 68, and 71. You'll see that the only difference is that the third wrong answer occurred on questions 9 in trial 67, on question 17 on trial 68, and on question 28 on trial 71. Again, the number of right and wrong answers is the same in all three trials, but placing the third incorrect answer choice closer to the end of the section results in a score difference of 90 points.

What is the lesson from all of this? Essentially, the lesson is that the GRE CAT does most of the work calibrating your score in the earlier part of the section. If you answer enough early questions correctly, it's very difficult to have your score fall significantly. If you answer most of the early question incorrectly, you can never recover to a decent score.

Simply put, the later questions don't count as much as the earlier ones do—you **MUST** do everything you can to make sure you get as many of the earlier questions right as you possibly can.

What You Should Do

The bizarre design of the GRE CAT will require you to adapt your test-taking approach in several ways.

Take the GRE CAT as many times as you can.

If your goal is to get the very best score you can, you should plan on taking the GRE CAT at least three or four times—this way, you'll give yourself a decent chance of taking a version of the GRE CAT with early questions you can do well on, thereby ratcheting up your score. Unfortunately, since you can only take the GRE CAT once a month, this approach requires some advance planning. If you don't have the time, money, or inclination to take the GRE CAT that many times, then you **MUST** commit yourself to the goal of answering as many early questions correctly in each section as you possibly can.

Invest more time in the first several questions on the test.

The first five to ten questions in each section are crucial if you want to make a top score, so don't be afraid to spend a disproportionately large amount of time on them. Double-check your answers, and then double-check them again.

Develop your "hunch guessing" skills

There are several types of guessing approaches we can use on standardized tests, but only one of them really works well on the GRE CAT. This approach is called "hunch guessing," and it's *almost* exactly what it sounds like—you'll choose your answer by following a hunch. But this isn't the same approach that most test-takers use when they guess. Instead of just blindly following your gut, you'll use the knowledge of the GRE CAT's rules and patterns that you get from this Guide to make more informed hunch guesses, and you'll only resort to guessing when you've exhausted all other possibilities. This will set you apart from the crowd and maximize your chances.

(In case you're wondering about the other guessing strategies that can be used on standardized tests, they all require you to be able to move back and forth within the test and consider things like answer distribution and subject matter. On the GRE CAT, it's impossible to move back and forth—you only see the question you're working on at the moment, and once you answer it you never see it again.)

Use a "time bank."

Because the questions on the GRE CAT have differing impacts on your final score, and because you can't skip around within a section, the GRE CAT will require a unique time-management strategy that you've probably never used before. Here's how it works:

First, allot each question a base time of 30 seconds. This means that your first instinct will always be to look for a 30-second solution to every question. (In fact, once you've studied this Strategy Guide, 30 seconds should seem like more time than you need.)

Next, establish a "time bank" in your head. Every time you finish a question in less than 30 seconds, the leftover time goes into the bank. Every time you take more than 30 seconds, the extra time comes out of the bank. The bank starts with 15 extra minutes

READ THIS FIRST!! Special Report: Strategies for the GRE CAT

for the Verbal section, and 31 extra minutes for the Math section (because the test gives you 30 minutes for 30 Verbal questions, and 45 minutes for 28 Math questions).

Every time you come to a question that you can't answer, you have to decide how much time to invest in answering it. This decision is based on the following factors:

- How far along in the section you are
- How much time you've already spent
- How likely you are to figure out the correct answer by spending more time on each particular question.



Remember that correct answers are very valuable, and worth investing time in; incorrect answers are useless, and you shouldn't spend any more time on them than you absolutely have to.

In other words, if you've been breezing through the questions and getting most of them right, then you can afford to spend a couple of minutes on a question that you find extremely challenging. But if you've been eating up a lot of time and making a lot of withdrawals from your time bank, then it might not make sense to waste even more time on a difficult question that you can't figure out; instead, just give it your best hunch guess and get on to a question that won't take so much effort.



If you only take one strategy away from this entire Guide, make it this one: Do whatever it takes to make sure you nail as many of the early questions as you can! Boost yourself up early, and your score will be significantly higher.

Now that we've analyzed the unique situation presented by the adaptive GRE, we can get started with strategies for actual question types. Let's begin with Analytical Writing, the first part of the GRE CAT.