GRE®

The GRE Mathematics Test (Rescaled)

Does your graduate department require or recommend that graduate applicants take the Mathematics Test (Rescaled) offered by the Graduate Record Examinations® Program?

This Subject Test can be very useful in distinguishing among candidates whose credentials are otherwise similar. The test measures undergraduate achievement and provides a common yardstick for comparing the qualifications of students from a variety of colleges and universities with different standards. Consider these factors:

Predictive validity

A combination of a GRE Subject Test score, GRE General Test scores, and undergraduate grade point average increases your ability to predict first-year success in graduate school.

Content that reflects today's curricula

The test consists of 66 multiple-choice questions, drawn from courses commonly offered at the undergraduate level. A brief summary of test topics can be found on the back of this sheet. Additional information about the test and a full-length practice test are provided FREE with test registration and can be downloaded from the GRE Web site at **www.gre.org/pracmats**.

Rescaled

The GRE Mathematics Test was rescaled in 2001 and renamed "Mathematics Test (Rescaled)." **The content of the test did not change**. The primary reason for rescaling the Mathematics Test was to make the test scores more useful for admissions committees and other score users by spreading out high-ability examinees on the score scale (200 to 990). The scores of the Mathematics Test population had increased substantially since the test was first scaled in 1952, and an increasingly large percentage of individuals each year had been earning 990, the highest possible score on the scale. Of the individuals tested between 1996 and 1999, 18% received a score of 990 (in other words, the percentage of test takers scoring below 990 was 82). The scale of the Mathematics Test (Rescaled) enables admissions committees and other score users to distinguish among high-scoring examinees, something the former scale was no longer able to do. Scores earned on the test after October 2001 should not be compared to scores earned prior to that date.

Developed by leading educators in the field

The content and scope of each edition of the test is specified and reviewed by a distinguished team of undergraduate and graduate faculty representing colleges and universities across the country.

Visit the GRE Web site at www.gre.org

Test Content

The test consists of 66 multiple-choice questions, drawn from courses commonly offered at the undergraduate level. Although the Mathematics Test has been rescaled, the content of the test has not changed. Approximately 50 percent of the questions involve calculus and its applications — subject matter that can be assumed to be common to the backgrounds of almost all mathematics majors. About 25 percent of the questions in the test are in elementary algebra, linear algebra, abstract algebra, and number theory. The remaining questions deal with other areas of mathematics currently studied by undergraduates in many institutions.

The following content descriptions may assist students in preparing for the test. The percentages given are estimates; actual percentages will vary somewhat from one edition of the test to another.

CALCULUS (50%)

Material learned in the usual sequence of elementary calculus courses — differential and integral calculus of one and of several variables — including calculus-based applications and connections with coordinate geometry, trigonometry, differential equations, and other branches of mathematics

ALGEBRA (25%)

Elementary algebra: basic algebraic techniques and manipulations acquired in high school and used throughout mathematics

Linear algebra: matrix algebra, systems of linear equations, vector spaces, linear transformations, characteristic polynomials, eigenvalues and eigenvectors

Abstract algebra and number theory: elementary topics from group theory, the theory of rings and modules, field theory, and number theory

ADDITIONAL TOPICS (25%)

Introductory real analysis: sequences and series of numbers and functions, continuity, differentiability and integrability, elementary topology of $\mathbb{R}$ and $\mathbb{R}^n$

Discrete mathematics: logic, set theory, combinatorics, graph theory, and algorithms

Other topics: general topology, geometry, complex variables, probability and statistics, and numerical analysis

The above descriptions of topics covered in the test should not be considered exhaustive; it is necessary to understand many other related concepts. Prospective test takers should be aware that questions requiring no more than a good precalculus background may be quite challenging; some of these questions turn out to be among the most difficult questions on the test. In general, the questions are intended not only to test recall of information, but also to assess the test taker's understanding of fundamental concepts and the ability to apply these concepts in various situations.