

# College Mathematics

## Description of the Examination

The College Mathematics examination covers material generally taught in a college course for nonmathematics majors and majors in fields not requiring knowledge of advanced mathematics.

The examination contains approximately 60 questions to be answered in 90 minutes. Some of these are pretest questions that will not be scored. Any time candidates spend on tutorials and providing personal information is in addition to the actual testing time.

An online scientific (nongraphing) calculator will be available during the examination. Although a calculator is not necessary to answer most of the questions, there may be a few problems whose solutions are difficult to obtain without using a calculator. Since no calculator is allowed during the examination except for the online calculator provided, it is recommended that prior to the examination you become familiar with the use of the online calculator.

**For more information about downloading the practice version of the scientific (nongraphing) calculator, please visit the College Mathematics description on the CLEP website, [clep.collegeboard.org](http://clep.collegeboard.org).**

It is assumed that candidates are familiar with currently taught mathematics vocabulary, symbols, and notation.

## Knowledge and Skills Required

Questions on the College Mathematics examination require candidates to demonstrate the following abilities in the approximate proportions indicated.

- Solving routine, straightforward problems (about 50 percent of the examination)
- Solving nonroutine problems requiring an understanding of concepts and the application of skills and concepts (about 50 percent of the examination)

The subject matter of the College Mathematics examination is drawn from the following topics. The percentages next to the main topics indicate the approximate percentage of exam questions on that topic.

### 20% Algebra and Functions<sup>1</sup>

Solving equations, linear inequalities, and systems of linear equations by analytic and graphical methods

Interpretation, representation, and evaluation of functions: numerical, graphical, symbolic, and descriptive methods

Graphs of functions: translations, horizontal and vertical reflections, and symmetry about the  $x$ -axis, the  $y$ -axis, and the origin

Linear and exponential growth

Applications

### 10% Counting and Probability

Counting problems: the multiplication rule, combinations, and permutations

Probability: union, intersection, independent events, mutually exclusive events, complementary events, conditional probabilities, and expected value

Applications

### 15% Data Analysis and Statistics

Data interpretation and representation: tables, bar graphs, line graphs, circle graphs, pie charts, scatterplots, and histograms

Numerical summaries of data: mean (average), median, mode, and range

Standard deviation, normal distribution (conceptual questions only)

Applications

<sup>1</sup>Types of functions that will be considered are linear, polynomial, radical, exponential, logarithmic, and piecewise defined.