Georgia End-of-Course
Mathematics I: Algebra/Geometry/Statistics
Performance Level Descriptors

EXCEEDS STANDARD

General Performance Level Descriptors

Students performing at this level demonstrate a comprehensive understanding and mastery of the procedures and concepts in the content domains of algebra, geometry, and data analysis. They routinely apply their understanding by making connections, reasoning, communicating, using representations, and solving problems. Performance at this level is indicated by the use of complex strategies and higher-level cognitive skills to analyze and solve mathematical and real-world problems.

Specific Performance Level Descriptors

Students at this level are able to do the following:

<u>Algebra</u>

- Analyze and evaluate the characteristics of basic functions and transformations of functions.
- Interpret and apply the characteristics of a function in a given context.
- Analyze and evaluate both constant and variable rates of change within the basic function families.
- Analyze and evaluate sequences as functions.
- Evaluate, simplify, translate, and apply complex expressions or equations using a variety of appropriate, equivalent forms.
- Use a variety of techniques to analyze and solve quadratic equations, including those containing radicals, square roots, and rational expressions.

Geometry

- Create proofs and solve for unknowns by analyzing and evaluating the characteristics of complex geometric figures in a coordinate plane.
- Evaluate logical arguments and draw appropriate conclusions in complex situations.
- Analyze and apply the properties of and relationships among special quadrilaterals.
- Understand and apply triangle theorems and postulates in complex situations.

Data Analysis and Probability

- Use principles of counting, permutations, and/or combinations to analyze and evaluate the number of outcomes in a given situation.
- Understand and apply the basic laws of probability, including expected value, in complex situations.
- Compare and evaluate summary statistics in a variety of complex situations.
- Analyze and evaluate the mean absolute deviation of a complex data set.

Georgia End-of-Course Test
Mathematics I: Algebra/Geometry/Statistics
Performance Level Descriptors

MEETS STANDARD

General Performance Level Descriptors

Students performing at this level demonstrate an understanding of and proficiency with the procedures and concepts in the content domains of algebra, geometry, and data analysis. They generally apply their understanding by making connections, reasoning, communicating, using representations, and solving problems. Performance at this level is indicated by the use of effective strategies and some higher-level cognitive skills to analyze and solve mathematical and real-world problems.

Specific Performance Level Descriptors

Students at this level are able to do the following:

Algebra

- Describe, graph, and identify the characteristics of basic functions and their transformations.
- Describe and explain the characteristics of functions with and without simple contexts.
- Describe and explain both constant and variable rates of change within the basic function families.
- Recognize sequences as functions with domains that are whole numbers.
- Evaluate, simplify, factor, and operate with expressions or equations using appropriate, equivalent forms.
- Solve simple quadratic equations, including those containing radicals, square roots, and rational expressions.

Geometry

- Create proofs and solve for unknowns by describing and explaining the characteristics of simple geometric figures in a coordinate plane.
- Use logical reasoning to draw appropriate conclusions.
- Describe and use the properties of and relationships among special quadrilaterals.
- Explain and use triangle theorems and postulates.

Data Analysis and Probability

- Use principles of counting, permutations, and/or combinations to determine the number of outcomes in a given situation.
- Describe and use the basic laws of probability, including expected value.
- Compare summary statistics in a variety of situations.
- Determine the mean absolute deviation of a simple data set.

Georgia End-of-Course Test
Mathematics I: Algebra/Geometry/Statistics
Performance Level Descriptors

DOES NOT MEET STANDARD

General Performance Level Descriptors

Students performing at this level demonstrate a minimal understanding of and proficiency with the procedures and concepts in the content domains of algebra, geometry, and data analysis. They are occasionally able to make connections, reason, communicate, use representations, and solve problems. Problem solving is based on their ability to memorize some key concepts and perform routine procedures.

Specific Performance Level Descriptors

Students at this level are able to do the following:

Algebra

- Recognize and identify some of the characteristics of some basic functions in function notation or graph form.
- Identify some of the characteristics of some basic functions.
- Recognize a constant rate of change in some simple functions.
- Recognize and extend some simple sequences.
- Simplify and perform basic operations with simple algebraic and numeric expressions.
- Recognize solutions to some simple linear and quadratic equations.

Geometry

- Solve for unknowns by identifying some characteristics of simple geometric figures in a coordinate plane.
- Recognize appropriate conclusions in some simple situations.
- Recognize and identify some properties of and relationships among special quadrilaterals in simple situations.
- Recognize and use some triangle theorems and postulates in simple situations.

Data Analysis and Probability

- Use principles of counting, permutations, and/or combinations to recognize the number of outcomes in some simple situations.
- Find the probability of an event in a simple situation.
- Recognize and identify some simple summary statistics.
- Recognize the mean absolute deviation in a simple situation in which all needed information is given.