Georgia End-of-Course Test
GPS Algebra
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 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:

Algebra

- Represent, simplify, and operate with complex numbers.
- Analyze and evaluate the characteristics and transformations of basic functions, including step, piecewise, and quadratic 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 arithmetic 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 absolute value equations, quadratic equations, and inequalities, including those containing radicals, square roots, and rational expressions.

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.
- Understand and apply algebraic models to quantify the association between two quantitative variables.
- Understand and describe in-depth issues that arise when using data to explore the relationship between two variables.

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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 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

- Perform basic arithmetic operations with complex numbers.
- Describe, graph, and identify the characteristics of basic functions and their transformations.
- Describe and explain the characteristics of functions with simple contexts.
- Describe and explain both constant and variable rates of change within the basic function families.
- Recognize and represent arithmetic sequences as functions with domains that are whole numbers.
- Evaluate, simplify, factor, and operate with expressions or equations using appropriate, equivalent forms.
- Solve simple absolute value equations, quadratic equations, and inequalities including those containing radicals, square roots, and rational expressions.

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.
- Use algebraic models to model the association between two quantitative variables.
- Recognize some of the issues that arise when using data to explore the relationship between two variables.

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

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.

- Recognize and identify quantitative relationships between two variables that are modeled by linear and nonlinear functions.
- Recognize some issues that arise when using data to explore the relationship between two variables.