



THE STATE EDUCATION DEPARTMENT

Algebra I Performance Level Descriptions

Policy Level Performance Level Definitions

For each subject area, there are students performing along a proficiency continuum with regard to the skills and knowledge necessary to meet the demands of Common Core Learning Standards for Mathematics. There are students who exceed the expectations of the standards, students meet the expectations, students who partially meet the expectations, and students who do not demonstrate sufficient knowledge or skills required for any performance level. New York State assessments are designed to classify students into one of four proficiency categories; the 50th percentile is the 50th percentile.



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Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
The Real Number	Generalize and explain	Calculate sums and	Calculate sums and	Distinguish between	Identify and order

Algebra I Performance Level Descriptions

Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
<p>Seeing Structure in Expressions (A-SSE)</p>	<p>Explain different interpretations of expressions.</p> <p>Find the most appropriate form of a quadratic function to solve real-world or mathematical problems.</p>				

Algebra I Performance Level Descriptions

Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
Arithmetic with Polynomials	Explain and/or show generally that	Perform addition, subtraction, and	Perform addition, subtraction, and	Perform addition and subtraction with linear	Perform addition with linear expressions.

Algebra I Performance Level Descriptions

Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
<p>Reasoning with Equations and Inequalities (A-REI)</p>	<p>Predict, without solving, when a quadratic equation will have no real solutions and explain reasoning with algebraic or graphical evidence.</p> <p>Solve linear equations and inequalities and construct a viable argument to justify the advantages of one particular method over another.</p>	<p>Solve quadratic equations in one variable and recognize cases in which a quadratic equation has no real solutions.</p> <p>Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.</p> <p>Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.</p>	<p>Solve quadratic equations in one variable with real roots using an appropriate method.</p> <p>Solve linear equations and inequalities in one variable.</p>	<p>Verify that a number is a solution to a quadratic equation.</p> <p>Solve one- and two-step linear equations in one variable.</p> <p>Given a system of linear equations in two variables and the solution, verify the solution algebraically.</p>	<p>Select solution strategies.</p> <p>Verify a solution to one- and two-step linear equations in one variable.</p> <p>Identify the solution to a system of linear equations from a graph.</p>

Algebra I Performance Level Descriptions

Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
<p>(A-REI continued)</p>	<p>Explain why the graph of an equation in two variables is the set of all its solutions. Represent coincidental linear equations as multiples of each other.</p> <p>Explain why there are multiple solutions to a system of inequalities.</p>	<p>Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$. (Functions are limited to linear, polynomial, rational, or absolute value.)</p> <p>Graph the solutions to a linear inequality in two variables as a half-plane and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.</p>	<p>Given a system of linear equations with integer coefficients in two variables, solve the system exactly or approximately. Approximate the solution(s) to $f(x) = g(x)$, where $f(x)$ and $g(x)$ are first- and second-degree polynomial functions.</p> <p>Graph the solutions to a linear inequality in two variables as a half-plane using a graphing calculator.</p>	<p>Approximate the solution(s) to $f(x) = g(x)$, where $f(x)$ and $g(x)$ are linear functions.</p> <p>Given the graph of an inequality (or system of inequalities), generate a point(s) in the solution set.</p>	<p>Given a graph of $y = g(x)$ and $y = f(x)$ (not limited to linear functions), use integer-valued coordinates to name a point of intersection.</p> <p>Given the graph of an inequality (or system of inequalities), identify whether a point is in the solution set.</p>
<p>Interpreting Functions</p>					

Algebra I Performance Level Descriptions

Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
(F-IF continued)	<p>Explain how and why explicit and recursive formulas define the same sequence and relate these representations to a context.</p>	<p>Evaluate functions. Identify the domain and range from a graph and interpret statements that use function notation in terms of a context.</p> <p>Identify a recursively defined sequence as a function and determine its n^{th} term.</p>	<p>Identify the domain from a graph or table of values.</p> <p>Interpret statements that use function notation.</p> <p>Identify an explicitly defined sequence as a function and determine its n^{th} term.</p>	<p>Identify the domain of a linear function given a table of values.</p> <p>Identify and continue patterns of arithmetic sequences.</p>	

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Algebra I Performance Level Descriptions

Domain	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
(F-BF continued)	Given the equation of a transformed linear or quadratic function, create an appropriate graph and interpret the transformations.	Identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$. Find the value of k given the graphs.	Identify the effect on a graph of replacing $f(x)$ with $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative integers).	Identify the effect on a graph of replacing $f(x)$ with $f(x) + k$ where k is a positive or negative integer and replacing $f(x)$ with $k f(x)$ where k is a positive integer.	Identify the effect on a graph of replacing $f(x)$ with $f(x) + k$ where k is a positive integer.
Linear,					

