New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Number and Quantity The Real Number System (N-RN)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Use properties of rational and irrational numbers.	N-RN.3 ~~Explain~~ why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	AI-N.RN.3 Use properties and operations to understand the different forms of rational and irrational numbers. a.) Perform all four arithmetic operations and apply properties to generate equivalent forms of rational numbers and square roots. Note: Tasks include rationalizing numerical denominators of the form $\frac{a}{\sqrt{b}}$ where a is an integer and b is a natural number. b.) Categorize the sum or product of rational or irrational numbers. x The sum and product of two rational numbers is rational. x The sum of a rational number and an irrational number is irrational. x The product of a nonzero rational number and an irrational number is irrational. x The sum and product of two irrational numbers could be either rational or irrational.

New York State Next Generation Mathematics Learning Standards
Algebra I Crosswalk

New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Algebra Seeing Structure in Expressions (A-SSE)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Interpret the structure of expressions.	A-SSE.2 Use the structure of an expression to identify ways to rewrite it. *For example, see x^4-y^4 as $(x^2)^2-(y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2-y^2)(x^2+y^2)$.* PARCC: Tasks limited to numerical and polynomial expressions in one variable. Recognize 53^2-47^2 as a difference of squares and see an opportunity to rewrite it in the easier-to-evaluate form (53+47)(53-47). See an opportunity to rewrite $a^2+9a+14$ as (a+7)(a+2). NYSED: Does not include factoring by grouping and factoring the sum and difference of cubes.	AI-A.SSE.2 Recognize and use the structure of an expression to identify ways to rewrite it. (Shared standard with Algebra II) e.g., $x^3 - x^2 - x = x(x^2 - x - 1)$ $53^2 - 47^2 = (53 + 47)(53 - 47)$ $16x^2 - 36 = (4x)^2 - (6)^2 = (4x + 6)(4x - 6) = 4(2x + 3)(2x - 3)$ or $16x^2 - 36 = 4(4x^2 - 9) = 4(2x + 3)(2x - 3)$ $-2x^2 + 8x + 10 = -2(x^2 - 4x - 5) = -2(x - 5)(x + 1)$ $x^4 + 6x^2 - 7 = (x^2 + 7)(x^2 - 1) = (x^2 + 7)(x + 1)(x - 1)$ Note: Algebra I expressions are limited to numerical and polynomial expressions in one variable. Use factoring techniques such as factoring out a greatest common factor, factoring the difference of two perfect squares, factoring trinomials of the form ax^2+bx+c with a lead coefficient of 1, or a combination of methods to factor completely. Factoring will not involve factoring by grouping and factoring the sum and difference of cubes.

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Algebra Seeing Structure in Expressions (ASSE)		
Cluster	NYS P-12 CCLS	NYS

New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Algebra Reasoning with Equations and Inequalities (A-REI)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Understand solving equations as a process of reasoning and explain the reasoning.	A-REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. ~~PARCC: Tasks are limited to quadratic equations.~~	AI-A.REI.1a Explain each step when solving a linear or quadratic equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
Solve equations and inequalities in one variable.	A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	AI-A.REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. Note: Algebra I tasks do not involve solving compound inequalities.
	A-REI.4 Solve quadratic equations in one variable. NYSED: Solutions may include simplifying radicals. A-REI.4a Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x-p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	AI-A.REI.4 Solve quadratic equations in one variable. Note: Solutions may include simplifying radicals.

New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Algebra Reasoning with Equations and Inequalities (A.REI)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Solve systems of equations.	A-REI.5 Prove that, given a system of two equations in tw variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. A-REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. PARCC: Tasks have a real-world conte ecex1.2(h)0.5(Td (on)0.5(t)-12.6(176.4 40a.35 >>)-296 543.12 459.12Re(t)-12.t)-14-1719.8(s)-12Re(on)0.4on45(Td (o ofo)-4(n).007 T6 1	STANDARD REMOVED

New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Functions Interpreting Functions (F.IF)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Understand the concept of a function and use function notation.	F-IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$	AI-F.IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$. Note: Domain and range can be expressed using inequalities, set builder notation, verbal description, and interval notations for functions of subsets of real numbers to the real numbers.
	F-IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	AI-F.IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
	F-IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. ~~*For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for n ≥ 1.*~~ ~~PARCC: This standard is part of the Major work in Algebra I and will be assessed accordingly.~~	AI-F.IF.3 Recognize that a sequence is a function whose domain is a subset of the integers. (Shared standard with Algebra II) Notes x Sequences (arithmetic and geometric) will be written explicitly and only in subscript notation. x Work with geometric sequences may involve an exponential equation/formula of the form $a_n = ar^{n-1}$, where a is the first term and r is the common ratio.

New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Functions Interpreting Functions (F.IF)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Interpret functions that arise in applications in terms of the context. **t**	F-IF.4	

New York State Next Generation Mathematics Learning Standards
Algebra I Crosswalk
Functions Building Functions (F.BF)

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New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Functions Linear, Quadratic and Exponential Models (F.LE) t		
Cluster	NYS P-12 CCLS	NYS Next G q 9 468.96 220.081 13.8896 220.08

New York State Next Generation Mathematics Learning Standards		
Algebra I Crosswalk		
Statistics and Probability Interpreting Categorical and Quantitative Data (SID)		
Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
Summarize, represent, and interpret data on two categorical and quantitative variables.	S-ID.5 Summarize categorical data for two categori in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	AI-S.ID.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in data.
	S-ID.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. S-ID.6a Fit a function to the data;	AI-S.ID.6 Represent bivariate data on a scatter plot, and describe the variables' values are related. Note: It's important to keep in mind that the data must be linked to the same "subjects," not just two unrelated quantitative variables; being careful not to assume a relationship between the actual variables (correlation/causation issue).

New York State Next Generation Mathematics Learning Standards
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Statistics and Probability Interpreting Categorical and Quantitative Data (SID)