

Skills and Concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) 261 - 270	Skills and Concepts to Introduce (27% Probability*) 271 - 280
<p>Expressions and Equations</p> <ul style="list-style-type: none"> • Simplifies rational expressions with exponents • Solves problems with scientific notation • Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation • Uses expressions to represent situations that involve variable quantities with exponents • Evaluates expressions by substituting with rational numbers • Simplifies monomials • Simplifies polynomial expressions • Simplifies algebraic expressions with integer exponents • Multiplies binomials • Multiplies a polynomial by a polynomial • Divides a polynomial by a monomial • Factors polynomials by identifying common factors • Factors trinomials in the form $x^2 + bx + c$ • Factors polynomials using difference of squares • Writes equivalent forms of algebraic equations using multiplication and division • Solves linear equations using rational numbers • Applies algebraic methods to solve complex real-world and theoretical problems • Rewrites a complex formula to solve for a specific variable • Identifies discriminants and roots • Solves quadratic equations by factoring • Solves quadratic equations by completing the square • Solves polynomial equations (e.g., $ax = b + cx$, $a(x + b) = c$, $ax + b = cx + d$, $a(bx + c) = d(ex + f)$, $a/x = b$) • Uses polynomial equations to solve area and perimeter problems • Solves polynomial equations with integers as exponents • Uses the Multiplication Property of Equality as a first step in solving systems of linear equations • Uses substitution as a first step in solving systems of linear equations • Uses algebraic methods to solve systems of linear equations • Uses graphs to solve systems of linear equations • Solves real-world systems of linear equations • Solves single variable linear inequalities with the variable in only one member using number lines • Solves single variable linear inequalities with variable in both members using number lines 	<p>Expressions and Equations</p> <ul style="list-style-type: none"> • Simplifies rational expressions with exponents • Simplifies rational expressions with negative exponents • Estimates the limit of a given infinite sequence (e.g., given the sequence $1/n$, as n gets larger) • Uses the compound interest equation to solve problems • Simplifies monomials • Simplifies polynomial expressions using power laws • Factors polynomials by identifying a common monomial and then factoring the trinomial • Rewrites a complex formula to solve for a specific variable • Solves quadratic equations using the quadratic formula • Solves quadratic equations by completing the square • Solves real-world systems of linear equations • Solves polynomial inequalities • Uses graphs to solve systems of linear inequalities 	<p>Expressions and Equations</p> <ul style="list-style-type: none"> • Describes a relationship or a real-world situation represented by a quadratic equation

Explanatory Notes

* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) 261 - 270	Skills and Concepts to Introduce (27% Probability*) 271 - 280
Expressions and Equations	Expressions and Equations	Expressions and Equations
<ul style="list-style-type: none"> • Uses graphs to solve systems of linear inequalities • Determines the length of the side of a square, given the area • Uses reasoning strategies to solve problems • Uses fractional and negative exponents as optional ways of representing problem situations (e.g., $27^{2/3} = (27^{1/3})^2 = 9$) 		
Use Functions to Model Relationships	Use Functions to Model Relationships	Use Functions to Model Relationships
<ul style="list-style-type: none"> • Uses an algebraic expression to represent a triangular number pattern • Rewrites an equation for a line in standard form • Determines x- or y-intercept of a given linear equation • Writes the equation of the line when given the graph of the line • Determines the graph of a line when given the equation • Writes linear equations, given two points on a line • Determines slope from graphs • Determines slope from ordered pairs and tables • Identifies and describes situations with varying rates of change • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation • Distinguishes between linear and nonlinear functions (analysis) • Uses graphs to represent functions and interpret slope • Identifies the equation of a parabola • Determines the vertex of a parabola • Determines the minimum and maximum of a quadratic function • Analyzes the properties and characteristics of exponential functions • Investigates, describes, and predicts the effects of parameter changes on the graphs of exponential functions • Determines the effects of parameter changes on functions • Determines the domain and range of a function 	<ul style="list-style-type: none"> • Writes the equation of the line when given the graph of the line • Writes linear equations, given slope and point on a line • Models real life functions using function notation • Determines the minimum and maximum of a quadratic function • Analyzes the properties and characteristics of exponential functions 	
<i>New Vocabulary:</i> coordinate plane, quadratic equation, undefined, wider, x-coordinate, y-coordinate	<i>New Vocabulary:</i> geometric series, semi-annual	<i>New Vocabulary:</i> None
<i>New Signs and Symbols:</i> [] square brackets, { } set notation, P perimeter	<i>New Signs and Symbols:</i> P principal, r rate, t time	<i>New Signs and Symbols:</i> None

Explanatory Notes

* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.