

Mathematics Standards	<i>Write Math Answers to Open-Ended Questions in Algebra, New Readers Press</i>
Mathematical Processes	
Standard 6-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.	
6-1.1 Generate and solve complex abstract problems that involve modeling physical, social, and/or mathematical phenomena.	
6-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.	
6-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.	
6-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.	SE: pp. 20–23, 64–79
6-1.5 Generalize mathematical statements based on inductive and deductive reasoning.	
6-1.6 Use correct and clearly written or spoken words, variables, and notations to communicate about significant mathematical tasks.	SE: pp. 4–79
6-1.7 Generalize connections among a variety of representational forms and real-world situations.	SE: pp. 4–79
6-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.	SE: pp. 4–79
Numbers and Operations	
Standard 6-2: The student will demonstrate through the mathematical processes an understanding of the concepts of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.	
6-2.1 Understand whole-number percentages through 100.	SE: pp. 60–71
6-2.2 Understand integers.	

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6-2.3 Compare rational numbers and whole-number percentages through 100 by using the symbols \leq , \geq , $<$, $>$, and $=$.	
6-2.4 Apply an algorithm to add and subtract fractions.	
6-2.5 Generate strategies to multiply and divide fractions and decimals.	SE: pp. 11, 32–39
6-2.6 Understand the relationship between ratio/rate and multiplication/division.	SE: pp. 40–51
6-2.7 Apply strategies and procedures to determine values of powers of 10, up to 10^6 .	
6-2.8 Represent the prime factorization of numbers by using exponents.	SE: pp. 12–15
6-2.9 Represent whole numbers in exponential form.	SE: pp. 12–15
Algebra	
Standard 6-3: The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities.	
6-3.1 Analyze numeric and algebraic patterns and pattern relationships.	SE: pp. 72–75
6-3.2 Apply order of operations to simplify whole-number expressions.	SE: pp. 12–19
6-3.3 Represent algebraic relationships with variables in expressions, simple equations, and simple inequalities.	SE: pp. 16–19, 24–39
6-3.4 Use the commutative, associative, and distributive properties to show that two expressions are equivalent.	
6-3.5 Use inverse operations to solve one-step equations that have whole-number solutions and variables with whole-number coefficients.	

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Geometry	
Standard 6-4: The student will demonstrate through the mathematical processes an understanding of shape, location, and movement within a coordinate system; similarity, complementary, and supplementary angles; and the relationship between line and rotational symmetry.	
6-4.1 Represent with ordered pairs of integers the location of points in a coordinate grid.	
6-4.2 Apply strategies and procedures to find the coordinates of the missing vertex of a square, rectangle, or right triangle when given the coordinates of the polygon's other vertices.	
6-4.3 Generalize the relationship between line symmetry and rotational symmetry for two-dimensional shapes.	
6-4.4 Construct two-dimensional shapes with line or rotational symmetry.	
6-4.5 Identify the transformation(s) used to move a polygon from one location to another in the coordinate plane.	
6-4.6 Explain how transformations affect the location of the original polygon in the coordinate plane.	
6-4.7 Compare the angles, side lengths, and perimeters of similar shapes.	SE: pp. 52–55
6-4.8 Classify shapes as similar.	SE: pp. 52–55
6-4.9 Classify pairs of angles as either complementary or supplementary.	
Measurement	
Standard 6-5: The student will demonstrate through the mathematical processes an understanding of surface area; the perimeter and area of irregular shapes; the relationships among the circumference, diameter, and radius of a circle; the use of proportions to determine unit rates; and the use of scale to determine distance.	
6-5.1 Explain the relationships among the circumference, diameter, and radius of a circle.	

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6-5.2 Apply strategies and formulas with an approximation of π (3.14, or $\frac{22}{7}$) to find the circumference and area of a circle.	
6-5.3 Generate strategies to determine the surface area of a rectangular prism and a cylinder.	
6-5.4 Apply strategies and procedures to estimate the perimeters and areas of irregular shapes.	
6-5.5 Apply strategies and procedures of combining and subdividing to find the perimeters and areas of irregular shapes.	
6-5.6 Use proportions to determine unit rates.	SE: pp. 44–51, 56–59, 68–71
6-5.7 Use a scale to determine distance.	SE: pp. 56–59
Data Analysis and Probability	
Standard 6-6: The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample.	
6-6.1 Predict the characteristics of one population based on the analysis of sample data.	
6-6.2 Organize data in frequency tables, histograms, or stem-and-leaf plots as appropriate.	SE: pp. 60–63, 72–79
6-6.3 Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.	
6-6.4 Use theoretical probability to determine the sample space and probability for one- and two-stage events such as tree diagrams, models, lists, charts, and pictures.	
6-6.5 Apply procedures to calculate the probability of complementary events.	

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Mathematical Processes	
Standard 7-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.	
7-1.1 Generate and solve complex abstract problems that involve modeling physical, social, or mathematical phenomena.	
7-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.	
7-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.	
7-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.	
7-1.5 Generalize mathematical statements based on inductive and deductive reasoning.	
7-1.6 Use correct and clearly written or spoken words, variables, and notation to communicate about significant mathematical tasks.	SE: pp. 4–79
7-1.7 Generalize connections among a variety of representational forms and real-world situations.	
7-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.	SE: pp. 4–79
Numbers and Operations	
Standard 7-2: The student will demonstrate through the mathematical processes an understanding of the representation of rational numbers, percentages, and square roots of perfect squares; the application of ratios, rates, and proportions to solve problems; accurate, efficient, and generalizable methods for operations with integers; the multiplication and division of fractions and decimals; and the inverse relationship between squaring and finding the square roots of perfect squares.	
7-2.1 Understand fractional percentages and percentages greater than one hundred.	SE: pp. 60–67
7-2.2 Represent the location of rational numbers and square roots of perfect squares on a number line.	

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7-2.3 Compare rational numbers, percentages, and square roots of perfect squares by using the symbols \leq , \geq , $<$, $>$, and $=$.	
7-2.4 Understand the meaning of absolute value.	
7-2.5 Apply ratios, rates, and proportions to discounts, taxes, tips, interest, unit costs, and similar shapes.	SE: pp. 40–63
7-2.6 Translate between standard form and exponential form.	SE: pp. 4–7
7-2.7 Translate between standard form and scientific notation.	SE: pp. 4–7
7-2.8 Generate strategies to add, subtract, multiply, and divide integers.	
7-2.9 Apply an algorithm to multiply and divide fractions and decimals.	
7-2.10 Understand the inverse relationship between squaring and finding the square roots of perfect squares.	
Algebra	
Standard 7-3: The student will demonstrate through the mathematical processes an understanding of proportional relationships.	
7-3.1 Analyze geometric patterns and pattern relationships.	SE: pp. 72–75
7-3.2 Analyze tables and graphs to describe the rate of change between and among quantities.	SE: pp. 72–79
7-3.3 Understand slope as a constant rate of change.	SE: pp. 68–71
7-3.4 Use inverse operations to solve two-step equations and two-step inequalities.	SE: pp. 28–31
7-3.5 Represent on a number line the solution of a two-step inequality.	
7-3.6 Represent proportional relationships with graphs, tables, and equations.	SE: pp. 48–63

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7-3.7 Classify relationships as either directly proportional, inversely proportional, or nonproportional.	
Geometry	
Standard 7-4: The student will demonstrate through the mathematical processes an understanding of proportional reasoning, tessellations, the use of geometric properties to make deductive arguments. the results of the intersection of geometric shapes in a plane, and the relationships among angles formed when a transversal intersects two parallel lines.	
7-4.1 Analyze geometric properties and the relationships among the properties of triangles, congruence, similarity, and transformations to make deductive arguments.	SE: pp. 52, 54–55
7-4.2 Explain the results of the intersection of two or more geometric shapes in a plane.	
7-4.3 Illustrate the cross section of a solid.	
7-4.4 Translate between two- and three-dimensional representations of compound figures.	
7-4.5 Analyze the congruent and supplementary relationships—specifically, alternate interior, alternate exterior, corresponding, and adjacent—of the angles formed by parallel lines and a transversal.	
7-4.6 Compare the areas of similar shapes and the areas of congruent shapes.	SE: pp. 8–11
7-4.7 Explain the proportional relationship among attributes of similar shapes.	SE: pp. 52–59
7-4.8 Apply proportional reasoning to find missing attributes of similar shapes.	SE: pp. 52–59
7-4.9 Create tessellations with transformations.	
7-4.10 Explain the relationship of the angle measurements among shapes that tessellate.	

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Measurement	
Standard 7-5: The student will demonstrate through the mathematical processes an understanding of how to use ratio and proportion to solve problems involving scale factors and rates and how to use one-step unit analysis to convert between and within the U.S. Customary System and the metric system.	
7-5.1 Use ratio and proportion to solve problems involving scale factors and rates.	SE: pp. 40–63
7-5.2 Apply strategies and formulas to determine the surface area and volume of the three-dimensional shapes prism, pyramid, and cylinder.	SE: pp. 8–11
7-5.3 Generate strategies to determine the perimeters and areas of trapezoids.	
7-5.4 Recall equivalencies associated with length, mass and weight, and liquid volume: 1 square yard = 9 square feet, 1 cubic meter = 1 million cubic centimeters, $1 \text{ kilometer} = \frac{5}{8} \text{ mile}$, 1 inch = 2.54 centimeters; 2.2 kilograms = 1 pound; and 1.06 quarts = 1 liter.	
7-5.5 Use one-step unit analysis to convert between and within the U.S. Customary System and the metric system.	
Data Analysis and Probability	
Standard 7-6: The student will demonstrate through the mathematical processes an understanding of the relationships between two populations or samples.	
7-6.1 Predict the characteristics of two populations based on the analysis of sample data.	
7-6.2 Organize data in box plots or circle graphs as appropriate.	
7-6.3 Apply procedures to calculate the interquartile range.	

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7-6.4 Interpret the interquartile range for data.	
7-6.5 Apply procedures to calculate the probability of mutually exclusive simple or compound events.	
7-6.6 Interpret the probability of mutually exclusive simple or compound events.	
7-6.7 Differentiate between experimental and theoretical probability of the same event.	
7-6.8 Use the fundamental counting principle to determine the number of possible outcomes for a multistage event.	

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Mathematical Processes	
Standard 8-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.	
8-1.1 Generate and solve complex abstract problems that involve modeling physical, social, or mathematical phenomena.	
8-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.	
8-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.	
8-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.	SE: pp. 8–11
8-1.5 Generalize mathematical statements based on inductive and deductive reasoning.	
8-1.6 Use correct and clearly written or spoken words, variables, and notations to communicate about significant mathematical tasks.	SE: pp. 4–79
8-1.7 Generalize connections among a variety of representational forms and real-world situations.	
8-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.	SE: pp. 4–79
Number and Operations	
Standard 8-2: The student will demonstrate through the mathematical processes an understanding of operations with integers, the effects of multiplying and dividing with rational numbers, the comparative magnitude of rational and irrational numbers, the approximation of cube and square roots, and the application of proportional reasoning.	
8-2.1 Apply an algorithm to add, subtract, multiply, and divide integers.	
8-2.2 Understand the effect of multiplying and dividing a rational number by another rational number.	
8-2.3 Represent the approximate location of irrational numbers on a number line.	

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8-2.4 Compare rational and irrational numbers by using the symbols \leq , \geq , $<$, $>$, and $=$.	
8-2.5 Apply the concept of absolute value.	
8-2.6 Apply strategies and procedures to approximate between two whole numbers the square roots or cube roots of numbers less than 1,000.	
8-2.7 Apply ratios, rates, and proportions.	SE: pp. 36–47, 60–63
Algebra	
Standard 8-3: The student will demonstrate through the mathematical processes an understanding of equations, inequalities, and linear functions.	
8-3.1 Translate among verbal, graphic, tabular, and algebraic representations of linear functions.	SE: pp. 64–79
8-3.2 Represent algebraic relationships with equations and inequalities.	SE: pp. 8–35, 52–55, 64–79
8-3.3 Use commutative, associative, and distributive properties to examine the equivalence of a variety of algebraic expressions.	
8-3.4 Apply procedures to solve multistep equations.	SE: pp. 8–23, 64–67, 72–79
8-3.5 Classify relationships between two variables in graphs, tables, and/or equations as either linear or nonlinear.	SE: pp. 64–71, 76–79
8-3.6 Identify the coordinates of the x - and y -intercepts of a linear equation from a graph, equation, and/or table.	SE: pp. 64–71, 76–79
8-3.7 Identify the slope of a linear equation from a graph, equation, and/or table.	SE: pp. 60–67

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Geometry		
Standard 8-4: The student will demonstrate through the mathematical processes an understanding of the Pythagorean theorem; the use of ordered pairs, equations, intercepts, and intersections to locate points and lines in a coordinate plane; and the effect of a dilation in a coordinate plane.		
8-4.1	Apply the Pythagorean theorem.	
8-4.2	Use ordered pairs, equations, intercepts, and intersections to locate points and lines in a coordinate plane.	
8-4.3	Apply a dilation to a square, rectangle, or right triangle in a coordinate plane.	
8-4.4	Analyze the effect of a dilation on a square, rectangle, or right triangle in a coordinate plane.	
Measurement		
Standard 8-5: The student will demonstrate through the mathematical processes an understanding of the proportionality of similar figures; the necessary levels of accuracy and precision in measurement; the use of formulas to determine circumference, perimeter, area, and volume; and the use of conversions within and between the U.S. Customary System and the metric system.		
8-5.1	Use proportional reasoning and the properties of similar shapes to determine the length of a missing side.	SE: pp. 40–43
8-5.2	Explain the effect on the area of two-dimensional shapes and on the volume of three-dimensional shapes when one or more of the dimensions are changed.	
8-5.3	Apply strategies and formulas to determine the volume of the three-dimensional shapes cone and sphere.	
8-5.4	Apply formulas to determine the exact (π) circumference and area of a circle.	
8-5.5	Apply formulas to determine the perimeters and areas of trapezoids.	
8-5.6	Analyze a variety of measurement situations to determine the necessary level of accuracy and precision.	

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8-5.7 Use multistep unit analysis to convert between and within U.S. Customary System and the metric system.	
Data Analysis and Probability	
Standard 8-6: The student will demonstrate through the mathematical processes an understanding of the relationships between two variables within one population or sample.	
8-6.1 Generalize the relationship between two sets of data by using scatterplots and lines of best fit.	SE: pp. 56–59
8-6.2 Organize data in matrices or scatterplots as appropriate.	SE: pp. 56–59
8-6.3 Use theoretical and experimental probability to make inferences and convincing arguments about an event or events.	
8-6.4 Apply procedures to calculate the probability of two dependent events.	
8-6.5 Interpret the probability for two dependent events.	
8-6.6 Apply procedures to compute the odds of a given event.	
8-6.7 Analyze probability using area models.	
8-6.8 Interpret graphic and tabular data representations by using range and the measures of central tendency (mean, median, and mode).	

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Elementary Algebra 1	
Standard EA-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.	
EA-1.1 Communicate a knowledge of algebraic relationships by using mathematical terminology appropriately.	SE: pp. 4–79
EA-1.2 Connect algebra with other branches of mathematics.	SE: pp. 4–79
EA-1.3 Apply algebraic methods to solve problems in real-world contexts.	SE: pp. 4–79
EA-1.4 Judge the reasonableness of mathematical solutions.	
EA-1.5 Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).	SE: pp. 4–79
EA-1.6 Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.	
EA-1.7 Understand how to represent algebraic relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).	
Elementary Algebra 2	
Standard EA-2: The student will demonstrate through the mathematical processes an understanding of the real number system and operations involving exponents, matrices, and algebraic expressions.	
EA-2.1 Exemplify elements of the real number system (including integers, rational numbers, and irrational numbers).	
EA-2.2 Apply the laws of exponents and roots to solve problems.	SE: pp. 60–63, 68–71
EA-2.3 Carry out a procedure to perform operations (including multiplication and division) with numbers written in scientific notation.	

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EA-2.4 Use dimensional analysis to convert units of measure within a system.	
EA-2.5 Carry out a procedure using the properties of real numbers (including commutative, associative, and distributive) to simplify expressions.	
EA-2.6 Carry out a procedure to evaluate an expression by substituting a value for the variable.	SE: pp. 4–7
EA-2.7 Carry out a procedure (including addition, subtraction, multiplication, and division by a monomial) to simplify polynomial expressions.	
EA-2.8 Carry out a procedure to factor binomials, trinomials, and polynomials by using various techniques (including the greatest common factor, the difference between two squares, and quadratic trinomials).	
EA-2.9 Carry out a procedure to perform operations with matrices (including addition, subtraction, and scalar multiplication).	
EA-2.10 Represent applied problems by using matrices.	
Elementary Algebra 3	
Standard EA-3: The student will demonstrate through the mathematical processes an understanding of relationships and functions.	
EA-3.1 Classify a relationship as being either a function or not a function when given data as a table, set of ordered pairs, or graph.	SE: pp. 64–67
EA-3.2 Use function notation to represent functional relationships.	SE: pp. 64–67
EA-3.3 Carry out a procedure to evaluate a function for a given element in the domain.	SE: pp. 64–67
EA-3.4 Analyze the graph of a continuous function to determine the domain and range of the function.	SE: pp. 64–67

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EA-3.5 Carry out a procedure to graph parent functions (including $y = x$, $y = x^2$, $y = \sqrt{x}$, $y = x $, and $y = \frac{1}{x}$).	SE: pp. 64–67
EA-3.6 Classify a variation as either direct or inverse.	SE: pp. 72–75
EA-3.7 Carry out a procedure to solve literal equations for a specified variable.	SE: pp. 8–27
EA-3.8 Apply proportional reasoning to solve problems.	
Elementary Algebra 4	
Standard EA-4: The student will demonstrate through the mathematical processes an understanding of the procedures for writing and solving linear equations and inequalities.	
EA-4.1 Carry out a procedure to write an equation of a line with a given slope and a y -intercept.	SE: pp. 32–35
EA-4.2 Carry out a procedure to write an equation of a line with a given slope passing through a given point.	SE: pp. 36–39
EA-4.3 Carry out a procedure to write an equation of a line passing through two given points.	SE: pp. 36–39
EA-4.4 Use a procedure to write an equation of a trend line from a given scatterplot.	SE: pp. 44–47
EA-4.5 Analyze a scatterplot to make predictions.	SE: pp. 44–47
EA-4.6 Represent linear equations in multiple forms (including point-slope, slope-intercept, and standard)	SE: pp. 24–27, 32–39
EA-4.7 Carry out procedures to solve linear equations for one variable algebraically.	SE: pp. 24–27
EA-4.8 Carry out procedures to solve linear inequalities for one variable algebraically and then to graph the solution.	SE: pp. 48–51
EA-4.9 Carry out a procedure to solve systems of two linear equations graphically.	SE: pp. 56–59

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EA-4.10 Carry out a procedure to solve systems of two linear equations algebraically.	SE: pp. 52–55
Elementary Algebra 5	
Standard EA-5: The student will demonstrate through the mathematical processes an understanding of the graphs and characteristics of linear equations and inequalities.	
EA-5.1 Carry out a procedure to graph a line when given the equation of the line.	SE: pp. 24–27, 32–35, 40–43, 48–51
EA-5.2 Analyze the effects of changes in the slope, m , and the y -intercept, b , on the graph of $y = mx + b$.	SE: pp. 28–39, 44–47
EA-5.3 Carry out a procedure to graph the line with a given slope and a y -intercept.	SE: pp. 32–35
EA-5.4 Carry out a procedure to graph the line with a given slope passing through a given point.	SE: pp. 36–39
EA-5.5 Carry out a procedure to determine the x -intercept and y -intercept of lines from data given tabularly, graphically, symbolically, and verbally.	SE: pp. 32–35
EA-5.6 Carry out a procedure to determine the slope of a line from data given tabularly, graphically, symbolically, and verbally.	SE: pp. 28–31
EA-5.7 Apply the concept of slope as a rate of change to solve problems.	SE: pp. 28–31
EA-5.8 Analyze the equations of two lines to determine whether the lines are perpendicular or parallel.	
EA-5.9 Analyze given information to write a linear function that models a given problem situation.	SE: pp. 40–43
EA-5.10 Analyze given information to determine the domain and range of a linear function in a problem situation.	
EA-5.11 Analyze given information to write a system of linear equations that models a given problem situation.	SE: pp. 24–27, 52–55
EA-5.12 Analyze given information to write a linear inequality in one variable that models a given problem situation.	SE: pp. 48–59

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Elementary Algebra 6	
Standard EA-6: The student will demonstrate through the mathematical processes an understanding of quadratic relationships and functions.	
EA-6.1 Analyze the effects of changing the leading coefficient a on the graph of $y = ax^2$.	
EA-6.2 Analyze the effects of changing the constant c on the graph of $y = x^2 + c$.	
EA-6.3 Analyze the graph of a quadratic function to determine its equation.	SE: pp. 64–67
EA-6.4 Carry out a procedure to solve quadratic equations by factoring.	SE: pp. 60–63
EA-6.5 Carry out a graphic procedure to approximate the solutions of quadratic equations.	SE: pp. 64–67
EA-6.6 Analyze given information to determine the domain of a quadratic function in a problem situation.	

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Intermediate Algebra 1		
Standard IA-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.		
IA-1.1	Communicate a knowledge of algebraic relationships by using mathematical terminology appropriately.	SE: pp. 4–79
IA-1.2	Connect algebra with other branches of mathematics.	SE: pp. 4–79
IA-1.3	Apply algebraic methods to solve problems in real-world contexts.	SE: pp. 4–79
IA-1.4	Judge the reasonableness of mathematical solutions.	SE: pp. 4–79
IA-1.5	Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).	SE: pp. 4–79
IA-1.6	Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.	SE: pp. 6, 9, 19, 58, 60
IA-1.7	Understand how to represent algebraic relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).	
Intermediate Algebra 2		
Standard IA-2: The student will demonstrate through the mathematical processes an understanding of functions, systems of equations, and systems of linear inequalities.		
IA-2.1	Carry out a procedure to solve a system of linear inequalities algebraically.	SE: pp. 41, 57–59
IA-2.2	Carry out a procedure to solve a system of linear inequalities graphically.	SE: pp. 40–43, 56–59
IA-2.3	Analyze a problem situation to determine a system of linear inequalities that models the problem situation.	SE: pp. 40–43, 56–59

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IA-2.4 Use linear programming to solve contextual problems involving a system of linear inequalities.	
IA-2.5 Carry out procedures to perform operations on polynomial functions (including $f(x) + g(x)$, $f(x) - g(x)$, $f(x) \cdot g(x)$, and $f(x)/g(x)$).	
IA-2.6 Apply a procedure to write the equation of a composition of given functions.	SE: pp. 44–47, 64–67
IA-2.7 Carry out a procedure to graph translations of parent functions (including $y = x$, $y = x^2$, $y = \sqrt{x}$, $y = x $, and $y = \frac{1}{x}$).	
IA-2.8 Carry out a procedure to graph transformations of parent functions (including $y = x$, $y = x^2$, and $y = x $).	
IA-2.9 Carry out a procedure to graph discontinuous functions (including piecewise and step functions).	
IA-2.10 Carry out a procedure to determine the domain and range of discontinuous functions (including piecewise and step functions).	SE: pp. 44–47
IA-2.11 Carry out a procedure to solve a system of equations (including two linear functions and one linear function with one quadratic function).	SE: pp. 64–67
Intermediate Algebra 3	
Standard IA-3: The student will demonstrate through the mathematical processes an understanding of quadratic equations and the complex number system.	
IA-3.1 Carry out a procedure to simplify expressions involving powers of i .	
IA-3.2 Carry out a procedure to perform operations with complex numbers (including addition, subtraction, multiplication, and division).	SE: pp. 4–15

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IA-3.3 Carry out a procedure to solve quadratic equations algebraically (including factoring, completing the square, and applying the quadratic formula).	SE: pp. 60–63
IA-3.4 Use the discriminant to determine the number and type of solutions of a quadratic equation.	
IA-3.5 Analyze given information (including quadratic models) to solve contextual problems.	SE: pp. 60–63
IA-3.6 Carry out a procedure to write an equation of a quadratic function when given its roots.	SE: pp. 64–67
Intermediate Algebra 4	
Standard IA-4: The student will demonstrate through the mathematical processes an understanding of algebraic expressions and nonlinear functions.	
IA-4.1 Carry out a procedure to perform operations (including multiplication, exponentiation, and division) with polynomial expressions.	
IA-4.2 Carry out a procedure to determine specified points (including zeros, maximums, and minimums) of polynomial functions.	
IA-4.3 Carry out a procedure to solve polynomial equations (including factoring by grouping, factoring the difference between two squares, factoring the sum of two cubes, and factoring the difference between two cubes).	
IA-4.4 Analyze given information (including polynomial models) to solve contextual problems.	SE: pp. 4–79
IA-4.5 Carry out a procedure to simplify algebraic expressions involving rational exponents.	SE: pp. 4–7
IA-4.6 Carry out a procedure to simplify algebraic expressions involving logarithms.	

Mathematics Standards	<i>Write Math Answers to Open-Ended Questions in Algebra,</i> New Readers Press
IA-4.7 Carry out a procedure to perform operations with expressions involving rational exponents (including addition, subtraction, multiplication, division, and exponentiation).	
IA-4.8 Carry out a procedure to perform operations with rational expressions (including addition, subtraction, multiplication, and division).	
IA-4.9 Carry out a procedure to solve radical equations algebraically.	
IA-4.10 Carry out a procedure to solve logarithmic equations algebraically.	
IA-4.11 Carry out a procedure to solve logarithmic equations graphically.	
IA-4.12 Carry out a procedure to solve rational equations algebraically.	
IA-4.13 Carry out a procedure to graph logarithmic functions.	
IA-4.14 Carry out a procedure to graph exponential functions.	
Intermediate Algebra 5	
Standard IA-5: The student will demonstrate through the mathematical processes an understanding of conic sections.	
IA-5.1 Carry out a procedure to graph the circle whose equation is the form $x^2 + y^2 = r^2$.	
IA-5.2 Carry out a procedure to write an equation of a circle centered at the origin when given its radius.	
IA-5.3 Carry out a procedure to graph the ellipse whose equation is the form $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.	

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IA-5.4 Carry out a procedure to write an equation of an ellipse centered at the origin when given information from among length of major axis, length of minor axis, and vertices.	
IA-5.5 Carry out a procedure to graph the hyperbola whose equation is the form $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$.	
IA-5.6 Carry out a procedure to write an equation of a hyperbola centered at the origin with specified vertices.	
IA-5.7 Match the equation of a conic section with its graph.	
Intermediate Algebra 6	
Standard IA-6: The student will demonstrate through the mathematical processes an understanding of sequences and series.	
IA-6.1 Categorize a sequence as arithmetic, geometric, or neither.	
IA-6.2 Carry out a procedure to write a specified term of an arithmetic or geometric sequence when given the nth term of the sequence.	
IA-6.3 Carry out a procedure to write a formula for the nth term of an arithmetic or geometric sequence when given at least four consecutive terms of the sequence.	
IA-6.4 Carry out a procedure to write a formula for the nth term of an arithmetic or geometric sequence when given at least four terms of the sequence.	
IA-6.5 Represent an arithmetic or geometric series by using sigma notation.	
IA-6.6 Carry out a procedure to calculate the sum of an arithmetic or geometric series written in sigma notation.	

Mathematics Standards	<i>Write Math Answers to Open-Ended Questions in Algebra,</i> New Readers Press
IA-6.7 Carry out a procedure to determine consecutive terms of a sequence that is defined recursively.	
IA-6.8 Carry out a procedure to define a sequence recursively when given four or more consecutive terms of the sequence.	