

Mathematics

ISAT Goal: Algebra

Subskill: Solving Equations, Simplifying Expressions, Order of Operations

RIT 271-280:

- Identify the region defined by a linear inequality

RIT 261-270:

- Find the slope of a line parallel to a given line; Find the x-intercept of a given equation; Solve equations with fractions as exponents; Analyze a graph to identify the appropriate system of equations; Determine the vertex of a parabola; Determine which of several equations can be factored; Determine commonalities between three given equations of lines

RIT 251-260:

- Simplify embedded expressions before solving linear equations and inequalities in one variable; Solve problems that use variables in expressions describing geometric quantities by solving for one variable; Solve equations with variables as exponents; Use the rules of exponents to multiply polynomials by monomials; Derive linear equations by using the point-slope function; Find the slope given two points on the line of a given graph; Write the equation of a line when given the graph of the line, two points on the line, or the slope of the line and a point on the line; Simplify monomials containing integer powers and roots; Find the solution set for inequalities that include absolute values; Identify the equation of a parabola; Simplify expressions containing cube roots; Solve expressions containing factorials; Find the number of possible solutions for a system of equations; Cube a binomial

Student List:

RIT 241-250:

- Students solve equations and inequalities involving absolute values; Solve a system of two linear equations in two variables algebraically and interpret the answer graphically; Graph a linear function in two variables using the slope-intercept method and identify intercepts; Solve a system of two linear inequalities in two variables and identify the solution set; Understand the concepts of parallel lines and perpendicular lines and how those slopes are related; Add, subtract, multiply, and divide monomials and polynomials; Apply basic factoring techniques to second- and simple third-degree polynomials, including finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials; Add, subtract, multiply, and divide rational expressions and functions; Find the difference of two squares

Student List:

RIT 231-240:

- Write an algebraic expression to model a situation; Evaluate an algebraic expression for given values; Explore equivalent ratios involving missing variables; Use the correct order of operations to evaluate numeric and algebraic expressions; Simplify and evaluate expressions that include positive and negative integral components; Simplify polynomials by combining like terms; Use the rules of exponents to multiply and divide monomials; Solve simple linear equations and inequalities over the rational numbers; Create a table of (x, y) values for the given linear equation and graph the function

Student List:

RIT 221-230:

- Solve for missing addends in an addition or subtraction sentence; Use boxes or other symbols to stand for any number in expressions or equations; Solve whole number equations with one variable (multiplication and division); Solve integer equations (one step, all four operations); Solve equations involving more than one operation; Solve one-step linear equations in one variable using addition, subtraction, multiplication, and division with integer solutions; Simplify numeric expressions by applying properties of rational numbers (e.g. identity, inverse, distributive, associative, commutative)

RIT 211-220:

- Solve decimal equations (one step, addition and subtraction); Solve integer equations (one step, multiplication and division); Evaluate expressions using the order of operations (may include parentheses or exponents); Solve quadratic equations

RIT 201-210:

- Evaluate an expression involving more than one operation (order of operations); Use the basic properties of multiplication to write an algebraic expression that is equivalent to a given algebraic expression; Solve equations involving more than one operation; Multiply and divide polynomials; Solve equations involving rational numbers (addition and subtraction)

RIT 191-200:

- Identify and understand the greater or lesser of two numerals (use the symbols $<$ and $>$ through 999,999); Use symbols of inequality, $<$ and $>$ to write and complete number sentences; Solve simple addition problems with "n" as an addend or sum; Solve simple multiplication problems with "n" as a multiple or product; Solve simple division problems with "n" as a quotient or divisor; Solve whole number equations with any operation

RIT 181-190:

- Solve for missing addends in an addition or subtraction sentence; Use inverse operations to find missing equation; Identify missing elements in number sentences

RIT 171-180:

- Solve for missing factors in a multiplication or division sentence; Evaluate a numerical equation involving more than one operation; Use $>$ or $<$ symbols to compare two numbers

RIT 161-170:

- Solve for missing numbers in an addition or subtraction sentence; Determine what operation is needed to solve a word problem (any operation)