

Algebraic Expressions

Students

Learning Continuum Statements:

Students:

RIT 211-220:

- Evaluates linear expressions at given values with variables involving positive rational numbers
- Evaluates nonlinear expressions at given values with variables involving positive rational numbers
- Generates equivalent linear expressions by using the associative, commutative, or distributive property
- Translates between verbal and algebraic expressions
- Writes linear expressions in one variable to represent real-world or mathematical contexts

Students:

RIT 221-230:

- Evaluates linear expressions at given values with variables involving negative rational numbers
- Evaluates linear expressions at given values with variables involving positive rational numbers
- Evaluates nonlinear expressions at given values with variables involving positive rational numbers
- Generates equivalent linear expressions by combining like terms
- Generates equivalent linear expressions by using the associative, commutative, and distributive properties, and by combining like terms
- Generates equivalent linear expressions by using the associative, commutative, or distributive property
- Interprets the coefficient and constant in a linear expression within the context of a real-world relationship
- Translates between verbal and algebraic expressions
- Writes linear expressions in one variable to represent real-world or mathematical contexts

Students:

RIT 231-240:

- Adds and subtracts polynomials
- Evaluates linear expressions at given values with variables involving negative rational numbers
- Evaluates linear expressions at given values with variables involving positive rational numbers
- Evaluates nonlinear expressions at given values with variables involving negative rational numbers
- Evaluates nonlinear expressions at given values with variables involving positive rational numbers
- Factors polynomials using a difference of squares
- Factors quadratic trinomials
- Generates equivalent linear expressions by combining like terms
- Generates equivalent linear expressions by using the associative, commutative, and distributive properties, and by combining like terms

- Generates equivalent linear expressions by using the associative, commutative, or distributive property
- Generates equivalent nonlinear expressions by combining like terms
- Identifies the mathematical components of an algebraic expression, including sum, product, quotient, term, and coefficient
- Interprets the coefficient and constant in a linear expression within the context of a real-world relationship
- Multiplies monomials
- Multiplies a polynomial by a monomial
- Multiplies two binomial expressions
- Translates between verbal and algebraic expressions
- Uses properties of exponents to simplify algebraic expressions involving whole-number exponents
- Writes algebraic expressions from a mathematical description of its component parts, including sum, product, quotient, term, and coefficient
- Writes linear expressions in one variable to represent real-world or mathematical contexts

Students:

RIT 241-250:

- Adds and subtracts polynomials
- Determines the number of terms in a polynomial
- Divides rational expressions
- Evaluates linear expressions at given values with variables involving negative rational numbers
- Evaluates linear expressions at given values with variables involving positive rational numbers
- Evaluates nonlinear expressions at given values with variables involving negative rational numbers
- Evaluates nonlinear expressions at given values with variables involving positive rational numbers
- Factors polynomials using a difference of squares
- Factors quadratic trinomials
- Generates equivalent linear expressions by combining like terms
- Generates equivalent linear expressions by using the associative, commutative, and distributive properties, and by combining like terms
- Generates equivalent linear expressions by using the associative, commutative, or distributive property
- Interprets equivalent linear expressions within a real-world context
- Interprets the coefficient and constant in a linear expression within the context of a real-world relationship
- Interprets the variable in a linear expression within the context of a real-world relationship
- Multiplies monomials
- Multiplies a polynomial by a monomial
- Multiplies two binomial expressions
- Simplifies rational expressions
- Translates between verbal and algebraic expressions
- Uses algebra tiles to model polynomials
- Uses properties of exponents to simplify algebraic expressions involving whole-number exponents

Students:**RIT 251-260:**

- Adds and subtracts polynomials
- Adds and subtracts rational expressions
- Divides rational expressions
- Evaluates linear expressions at given values with variables involving negative rational numbers
- Evaluates nonlinear expressions at given values with variables involving negative rational numbers
- Factors polynomials using a difference of squares
- Factors polynomials with a degree greater than 2 by identifying common monomial factors
- Factors polynomials with a degree greater than 2 by identifying common monomial factors and factoring the resulting polynomial
- Factors quadratic trinomials
- Generates equivalent nonlinear expressions by using the associative, commutative, and distributive properties, and by combining like terms
- Interprets equivalent linear expressions within a real-world context
- Interprets the constant in a quadratic expression within the context of a real-world relationship
- Multiplies monomials
- Multiplies a polynomial by a monomial
- Multiplies polynomials
- Multiplies rational algebraic expressions
- Multiplies two binomial expressions
- Simplifies rational expressions
- Uses properties of exponents to simplify algebraic expressions involving negative integer exponents, including zero
- Uses properties of exponents to simplify algebraic expressions involving whole-number exponents
- Writes a rational expression as a sum of a polynomial and a proper rational expression

Students:**RIT 261-270:**

- Adds and subtracts polynomials
- Adds and subtracts rational expressions
- Divides rational expressions
- Evaluates nonlinear expressions at given values with variables involving negative rational numbers
- Factors a quadratic expression with complex solutions
- Factors algebraic expressions by grouping
- Factors polynomials with a degree greater than 2 by identifying common monomial factors
- Factors polynomials with a degree greater than 2 by identifying common monomial factors and factoring the resulting polynomial
- Factors quadratic trinomials
- Generates equivalent nonlinear expressions by using the associative, commutative, and distributive properties, and by combining like terms
- Interprets equivalent linear expressions within a real-world context
- Multiplies a polynomial by a monomial
- Multiplies polynomials
- Performs multiple operations with rational expressions
- Simplifies rational expressions
- Squares binomial expressions

- Squares binomial expressions containing complex numbers
- Uses properties of exponents to simplify algebraic expressions involving negative integer exponents, including zero
- Uses properties of exponents to simplify algebraic expressions involving whole-number exponents
- Writes linear expressions in two variables to represent real-world or mathematical contexts
- Writes quadratic expressions in one variable to represent real-world or mathematical contexts

Students:

RIT 271-280:

- Adds and subtracts rational expressions
- Divides rational expressions
- Evaluates expressions at given values with variables involving complex numbers
- Factors a quadratic expression with complex solutions
- Factors algebraic expressions by grouping
- Performs multiple operations with rational expressions
- Simplifies rational expressions
- Squares binomial expressions containing complex numbers
- Uses properties of exponents to simplify algebraic expressions involving negative integer exponents, including zero
- Writes quadratic expressions in one variable to represent real-world or mathematical contexts
- Writes rational expressions in one variable to represent real-world or mathematical contexts

Students:

RIT 281-290:

- Squares binomial expressions containing complex numbers
- Uses properties of exponents to simplify algebraic expressions involving negative integer exponents, including zero