

ALGEBRA I MONITORING SHEETS

REVIEW SECTION

- Tri. A.I.R.1 Performing all computational skills without a calculator
- Tri. A.I.R.2 Comprehending and applying the concepts of greater than, less than, absolute value
- Tri. A.I.R.3 Simplifying and computing numerical expressions involving fractions, negatives, decimals, absolute value, percents etc.
- Tri. A.I.R.4 Applying the order of operations to the simplification of complicated expressions, with and without grouping symbols
- Tri. A.I.R.5 Translating verbal statements into equations
- Tri. A.I.R.6 Replacing variables with numbers and evaluating expressions, including those with exponents ; defining base and exponent
- Tri. A.I.R.7 Using matrices to organize and manipulate data
- Tri. A.I.R.8 Finding the probability of an event given a sample space
- Tri. A.I.R.9 Using data to find mean, median, and mode and representing the data graphically
- Tri. A.I.R.10 Identifying, distinguishing among, and using various subsets of the real numbers
_____ Real numbers
_____ Irrational numbers
_____ Rational numbers
_____ Integers
_____ Whole numbers
_____ Natural or counting numbers
- Tri. A.I.R. 11 Graphing real numbers on the number line
- Tri. A.I.R.12 Graphing real number ordered pairs on coordinate plans
- Tri. A.I.R.13 Learning and applying correct terminology
- Tri. A.I.R.14 Applying real number properties to solve equations in one variable
- Tri. A.I.R.15 Solving simple application problems
- Tri. A.I.R.16 Solving equations involving percents and proportions
- Tri. A.I.R.17 Factoring integers (include prime factorization), finding greatest common factor and least common multiple of several integers
- Tri. A.I.R.18 Using scientific notation and expanded form
- Tri. A.I.R.19 Reviewing the concept of order of real numbers and graph inequalities in one variable
- Tri. A.I.R.20 Transforming inequalities in order to solve them
- Tri. A.I.R.21 Learning and applying properties of rational numbers

- Tri. A.I.R.22 Expressing rational numbers as decimals or fractions
- Tri. A.I.R.23 Learning and memorizing the square of numbers from 1 to 12
- Tri. A.I.R.24 Finding square roots of numbers that have rational and irrational square roots
- Tri. A.I.R.25 Using Pythagorean Theorem and its converse to solve geometric problems
- Tri. A.I.R.26 Comparing and simplifying with rational and irrational numbers

CORE CURRICULUM

- Tri. A.I.C.1 Understanding and being able to identify basic algebraic properties and using them efficiently to simplify algebraic expressions
- Tri. A.I.C.2 Understanding and correctly applying the distributive property
- Tri. A.I.C.3 Simplifying expressions involving variables raised to powers, including negative and zero (0) powers
- Tri. A.I.C.4 Understanding, correctly interpreting and applying scientific notation
- Tri. A.I.C.5 Solving literal equations for any variable
- Tri. A.I.C.6 Solving all types of one variable equations and problems, including those with the variable on both sides
- Tri. A.I.C.7 Solving application problems using the multi-step plan or charts
- Tri. A.I.C. 8 Defining and using vocabulary
 - _____ a. Monomial, binomial, trinomial, polynomial
 - _____ b. Constant, coefficient, similar or like terms
 - _____ c. Degree of a monomial
 - _____ d. Degree of a polynomial
- Tri. A.I.C.9 Performing operations with polynomials
 - _____ a. Add and subtract polynomials
 - _____ b. Multiply polynomials by monomials and polynomials
 - _____ c. Find powers of monomials using rule of exponents for a power of a power and rule of exponents for power of a product
 - _____ d. Divide polynomials by monomials and divide polynomials by polynomials using long division
- Tri. A.I.C.10 Solving application problems involving polynomials
 - _____ a. Rate-time distance problems
 - _____ b. Area problems
- Tri. A.I.C.11 Finding quotients and factors
 - _____ a. Simplify quotients of monomials and find the greatest common factor of several monomials
 - _____ b. Find monomial factors of polynomials
- Tri. A.I.C.12 Finding products and factor
 - _____ a. Find products of two binomials mentally (using FOIL or similar method)
 - _____ b. Simplify products of the form $(a+b)(a-b)$ and factor difference of two squares

- _____ c. Find the squares of binomials and factor perfect square trinomials
- Tri. A.I.C.13 Applying 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, recognizing perfect square trinomials, factoring general trinomials and factoring by grouping
- Tri. A.I.C.14 Solving polynomial equations by factoring and using the zero (0) product property
- Tri. A.I.C.15 Simplifying rational expressions
- Tri. A.I.C.16 Multiplying and dividing rational expressions
- Tri. A.I.C.17 Adding and subtracting rational expressions with like and unlike denominators
- Tri. A.I.C.18 Solving problems involving ratios and proportions
- Tri. A.I.C.19 Solving equations with rational expressions and corresponding application problems
- _____ a. Mixture
- _____ b. Work
- _____ c. Percent
- Tri. A.I.C.20 Graphing ordered pairs and linear equations in two variables
- _____ a. Identify coordinate axes, origin, and quadrants
- Tri. A.I.C.21 Finding slope of a line as a rate of change and as rise over run
- Tri. A.I.C.22 Using slope-intercept form of a linear equation and standard form to find the x and y intercepts
- Tri. A.I.C.23 Finding an equation of a line given the slope and one point on the line, or given two points on the line using point-slope form
- Tri. A.I.C.24 Finding equations of lines through a given point with a zero or undefined slope
- Tri. A.I.C. 25 Finding an equation of a line that is parallel or perpendicular to a given line through a given point
- Tri. A.I.C.26 Solving linear equations by graphing
- Tri. A.I.C.27 Understanding what a function is and defining a function by using tables, graphs, mapping and ordered pairs
- Tri. A.I.C.28 Defining a function using functional notation and identifying domain and range of the function
- Tri. A.1.C. 29 Graphing linear and quadratic functions
- Tri. A.I.C.30 Solving systems of linear equations in two variables by
- _____ a. Graphing
- _____ b. Substitution
- _____ c . Addition-or-subtraction method with multiplication
- Tri. A.I.C.31 Solving application problems using systems of linear equations
- _____ a. Wind and water current problems
- _____ b. Age, digit and fraction problems

- _____ c. Other types of applicable problems
- Tri. A.I.C.32 **Expressing square-roots and cube roots of whole numbers**
- Tri. A.I.C.33 **Finding the square roots of variable expressions and using them to solve equations and application problems**
- Tri. A.I.C.34 **Working with square-root radical expressions**
- _____ a. Simplify products and quotients of radicals
- _____ b. Simplify sums and differences of radicals
- _____ c. Multiply binomials containing square-root radicals and rationalize binomial denominators that contain square-root radicals
- Tri. A.I.C.35 **Solving simple square root radical equations and corresponding application problems**
- Tri. A.I.C.36 **Solving application problems that involve inequalities**
- Tri. A.I.C.37 **Combining open sentences**
- _____ a. Find union and intersection of sets, using set notation
- _____ b. Find solution sets of combined inequalities and graph them on a number line
- _____ c. Solve equations and inequalities involving absolute value and graph the solution on a number line
- Tri. A.I.C.38 **Graphing linear inequalities in two variables on a coordinate plane**
- Tri. A.I.C.39 **Graphing the solution set of a system of two linear inequalities in two variables on a coordinate plane**
- Tri. A.I.C.40 **Solving quadratic equations involving perfect squares**
- Tri. A.I.C.41 **Solving quadratic equations by completing the square**
- Tri. A.I.C.42 **Learning the quadratic formula and using it to solve quadratic equations such as motion of an object under the force of gravity**
- Tri. A.I.C.43 **Analyzing a relation to determine whether a direct or inverse variation exists and representing a direct variation algebraically and graphically and an inverse variation algebraically**
- Tri. A.I.C.44 **Interpreting variation in real-world contexts and calculating and interpreting mean absolute deviation, standard deviation and z-scores**
- Tri. A.I.C.45 **Comparing and contrasting multiple univariate data sets, using box-and whicker plots**
- Tri. A.I.C.46 **Determining the equation of the curve of best fit in order to make predictions and solving real-world problems using mathematical models including linear and quadratic functions**