| **Concepts***Describe what students should know (key knowledge) as a result of this instruction specific to grade level.* | **Competencies***Describe what students should be able to do (key skills) as a result of this instruction, specific to grade level.* | **Tier 3 Vocabulary***Words with a low frequency of use, often limited to special, specific domains. They are best learned when a specific need arises.* |
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| Properties of Rational and Irrational Numbers | Apply and extend the properties of exponents to solve the problems with rational exponentsRepresent and/or use numbers in equivalent forms (integers, fractions, decimals, percent’s, square roots, exponents).Apply properties of rational and irrational numbers to solve real world or mathematical problems CC.2.1.HS.F.1CC.2.1.HS.F.2 | 1) Absolute Value2) Additive Inverse3) Arithmetic Sequence\*4) Asymptote\*5) Binomial6) Bar Graph\*7) Box-and-Whisker Plot\*8) Circle Graph\*9) Coefficient10) Composite Number\*11) Compound Event12) Constant13) Coordinate Plane\*14) Degree (of polynomial)15) Dependent Events16) Dependent Variable17) Domain (of Relation or Function)18) Elimination Method19) Estimation Strategy20) Exponent\*21) Expression\*22) Factor (verb)23) Factor a Monomial24) Factor a Polynomial25) Function26) Independent Events27) Independent Variable\*28) Interquartile Range29) Inverse (of a Relation)30) Irrational Number31) Like Terms32) Line of Best Fit33) Linear Combination34) Linear Equation35) Linear Function36) Linear Inequality37) Mapping38) Maximum Value (of a Graph)39) Measure of Central Tendencies40) Measure of Dispersion41) Minimum Value42) Monomial43) Multiplicative Inverse44) Negative Exponent\*45) Odds46) Outlier47) Point-Slope Form48) Polynomial49) Polynomial Function50) Positive Exponents\*51) Power\*51) Power of a Power52) Powers of Products53) Probability\*54) Probability of Compound Events55) Quadratic Equation56) Quartile57) Radical Expression58) Range (of a Function or Relation)59) Rate\*60) Rate (of Change)61) Ratio62) Rational Expression63) Relation64) Rise\*65) Run\*66) Scatterplot67) Simple Event68) Simplest form (of an Expression)69) Slope (of a Line)70) Slope-Intercept Form71) Standard Form (of a Linear Equation)72) Stem-and-Leaf Plot73) Substitution74) Substitution Method75) Systems of Linear Equations76) Systems of Linear Inequalities77) Term78) Trinomial79) Unit Rate80) Variable81) x-intercept82) y-intercept\* – May not be Tier 3 in Algebra 1 |
| The Real Number System | Apply and extend the properties of exponents to solve problems with rational exponentsApply number theory concepts to show relationships between real numbers in problem-solving settings.Use exponents, roots, and/or absolute values to solve problems.Use estimation strategies in problem-solving situations.CC.2.1.HS.F.1CC.2.1.HS.F.2CC.2.1.HS.F.3 |
| Equations and Inequalities | Interpret solutions to linear equations and inequalities.Interpret solutions to linear systems of equations and inequalities.Evaluate reasonability of solutions.CC.2.1.HS.F.3CC.2.1.HS.F.4CC.2.1.HS.F.5 |
| Polynomial and Rational Expressions  | Simplify/factor expressions involving polynomials.Apply and extend previous understandings of arithmetic to algebraic expressions.Use polynomial identities.Perform arithmetic operations on polynomials. CC.2.2.HS.D1CC.2.2.HS.D2CC.2.2.HS.D3CC.2.2.HS.D5CC.2.2.HS.D6 |
| Equations and Inequalities | Write, solve, and/or graph linear equations and inequalities using various methods.Write, solve, and/or graph systems of linear equations and inequalities using various methods.Use and/or identify algebraic properties.CC.2.2.HS.C.1CC.2.2.HS.C.2CC.2.2.HS.C.3 |
| Equations and Inequalities | Write, solve, and/or graph compound inequalities.Write and/or identify linear equations in various forms (slope-intercept, point-slope, standard, etc.).Understand and apply the Pythagorean Theorem.Describe, compute, and/or use linear rate of change (slope). CC.2.2.HS.C3CC.2.2.HS.C5CC.2.2.HS.D7CC.2.2.HS.D9CC.2.2.HS.D10 |
| Patterns, Relations and Functions | Define, evaluate, and compare functions.Use the concept and notation of function to interpret and apply them in terms of their context.Create a function and/or sequence that model relationships between two quantities.Create and/or analyze functions using multiple representations (graph, table, and equation).Create new functions from existing functions (transformations of graphs).Construct and compare linear, quadratic, and exponential models and solve problems.CC.2.2.HS.C1CC.2.2.HS.C2CC.2.2.HS.C3CC.2.2.HS.C4CC.2.2.HS.C6 |
| Categorical and Quantitative Data | Analyze a set of data for a pattern, and represent the pattern with an algebraic rule and/or a graph.Summarize, represent, and interpret single-variable data and two-variable data.Use measures of dispersion to describe a set of data (range, quartiles, interquartile range).Analyze and/or interpret data displays and/or use them to make predictions (circle graph, line graph, bar graph, box-and-whisker plot, stem-and-leaf plot, scatter plot).Make inferences and justify conclusions based on sample surveys, experiments, and observational studiesCC.2.4.HS.B.1CC.2.4.HS.B.2CC.2.4.HS.B.3CC.2.4.HS.B.5 |  |
| Probability | Calculate and/or make predictions based upon measures of central tendency.Apply probability to practical situations, including compound events. Recognize and evaluate random processes underlying statistical experimentsApply the rules of probability to compute probabilities of compound events in a uniform probability modelCC.2.4.HS.B.4CC.2.4.HS.B.7 |