MATH 7 HONORS

Unit 1: Rational and Irrational Numbers (Term 1)

1. I **CAN** write an algebraic expression for a given phrase.
2. I **CAN** define a variable and write an equation given a relationship.
3. I **CAN** use *order of operations* to simplify an algebraic expression.
4. I **CAN** name the set(s) of numbers to which a given number belongs.
5. I **CAN** use an inequality to compare numbers.
6. I **CAN** find the absolute value of a number.
7. I **CAN** look for patterns in a set of given numbers.
8. I **CAN** find the mean, median, mode, and range of a set of numbers.
9. I **CAN** complete a real-life *Enrichment* activity involving a situation that uses rational and irrational numbers.

Unit 2: Using Algebraic Properties to Simplify Expressions - Probability

1. I **CAN** add rational numbers.
2. I **CAN** subtract rational numbers.
3. I **CAN** multiply rational numbers.
4. I **CAN** divide rational numbers.
5. I **CAN** evaluate a given algebraic expression.
6. I **CAN** use the distribution property to simplify and algebraic expression.
7. I **CAN** identify the following properties for addition and multiplication: commutative, associative, identity, inverse, symmetric, distributive, and property of zero.

8. I ***CAN*** use theoretical and experimental probability to make predictions.

9. I ***CAN*** complete a real-life *Enrichment* activity that involves probability.

Unit 3: Solving Equations, Proportions, and Pythagorean Theorem

1. I ***CAN*** use the correct steps for solving *two-step* equations to solve for a given variable.
2. I ***CAN*** use the correct steps for solving *multi-step* equations to solve for a given variable.
3. I ***CAN*** use the correct steps for solving equations that contain a variable on each side of the equal sign.
4. I ***CAN*** use ratios and proportions to convert from one unit value to another unit value.
5. I ***CAN*** solve a proportion for a given variable.
6. I ***CAN*** use proportions to solve for a missing side of a given triangle, rectangle, and find actual distances on a scale drawing or map.
7. I ***CAN*** use proportions to find the *percent of change* for the increase or decrease between two given amounts.
8. I ***CAN*** find the *square root* of a number and estimate the *square root* of a given number.
9. I ***CAN*** use the *Pythagorean Theorem* to find the missing side of a right triangle, and to verify that a given triangle is a right triangle.

10. I ***CAN*** complete a real-life *Enrichment* activity that uses the pythagorean theorem.

Unit 4: Solving and Graphing Inequalities (Term 2)

1. I **CAN** graph a given inequality and determine if a given number is a solution of the given inequality.
2. I **CAN** use the correct steps for solving *one-step and two-step* inequalities to solve for a given variable.
3. I **CAN** use the correct steps for solving *multi-step* inequalities to solve for a given variable.
4. I **CAN** complete a real-life *Enrichment* activity that uses inequality graphs.

Unit 5: Functions, Direct/Inverse Variation, and Reasoning

1. I **CAN** relate a given graph to an event and make a conclusion based on the information given in a graph.
2. I **CAN** identify a *function* and use a *table of values* or a *mapping* to graph a given relation.
3. I **CAN** write a *function rule* for a given *table of values.*
4. I **CAN** determine whether an equation is using *direct* or *inverse* variation.
5. I **CAN** write a *direct* or *inverse* variation equation that includes a given point.
6. I **CAN** use *inductive* or *deductive* reasoning to make conclusions based on patterns.
7. I **CAN** complete a real-life *Enrichment* activity that uses *Reasoning* and *Logic.*

Unit 6: Rate of Change/Slope, Graphing Linear Equations, Scatter Plots, Translations and Transformations

1. I **CAN** determine the *rate of change* or *slope* of a line using a graph of the line.
2. I **CAN** determine the *slope* of a line given a set of points.
3. I **CAN** use the *slope-intercept* and *standard form* of a given equation to graph lines.
4. I **CAN** use *slopes* to determine if lines are parallel or perpendicular to each other.
5. I **CAN** write an equation of a line that is parallel or perpendicular to a given line or equation.
6. I **CAN** write an equation of a given scatter plot and determine the scatter plot has a *positive, negative,* or *no correlation.*
7. I **CAN** use *translations and transformations,* to graph absolute value equations.
8. I **CAN** complete a real-life *Enrichment* activity that involves correlation of a given graph.

Unit 7: Systems of Equations and Inequalities (Term 3)

1. I **CAN** solve a *system of equations* by graphing the system and finding the intersection point of the graphed equations.
2. I **CAN** solve a *system of equations* by using the *substitution* method for solving systems.
3. I **CAN** solve a *system of equations by using the elimination* method for solving systems.
4. I **CAN** graph a linear inequality in a coordinate plane.
5. I **CAN** solve a *system of linear inequalities* by graphing in a coordinate plane.

Unit 8: Positive and Negative Exponents, Scientific Notation, Sequences

1. I **CAN** simplify and algebraic expression that contains negative exponents.
2. I **CAN** convert a number written in standard notation to scientific notation and a number written in scientific notation to standard notation.
3. I **CAN** use the multiplication properties of exponents; P*owers With the Same Base, Raising a Power to a Power, Raising a Product to a Power,* to simplify algebraic expressions.
4. I **CAN** use the division properties of exponents; D*ividing Powers With the Same Base, Raising a Quotient to a Power,* to simplify algebraic expressions.
5. I **CAN** identify the difference between *arithmetic* and *geometric* sequences, determine the common ratio, and use the common ration to find the next numbers in a sequence.
6. I **CAN** complete a real-life *Enrichment* activity that involves using *geometric* or *arithmetic* sequences to make find the next terms in a sequence.

Unit 9: Polynomials and Factoring

1. I **CAN** classify and name the degree of a given polynomial.
2. I **CAN** add, subtract, multiply, and divide polynomials.
3. I **CAN** find the *greatest common factor* of a given polynomial.
4. I **CAN** multiply two given *binomial* factors.
5. I **CAN** multiply a given *binomial* factor by a given *trinomial* factor.
6. I **CAN** multiply the *Square of a Binomial* factor.
7. I **CAN** multiply the *Difference of Squares* of binomial factors.
8. I **CAN** factor *trinomials* into two *binomial* factors.

9. I **CAN** factor the *Difference of Two Squares* into two *binomial* factors.

10. I **CAN** *Factor by Grouping* a given polynomial.

11. I **CAN** complete a real-life *Enrichment* activity that involves factoring.

Unit 10: Quadratic Equations and Functions (Term 4)

1. I **CAN** identify the *vertex* and *axis of symmetry,* and then graph a quadratic function.
2. I **CAN** solve a *quadratic equation* by solving for the given variable(s).
3. I **CAN** solve a *quadratic equation* by factoring for the given variable(s).
4. I **CAN** solve a *quadratic equation* by *completing the square* on the given quadratic equation.
5. I **CAN** solve a *quadratic equation* by using the *quadratic formula* on the given quadratic equation.
6. I **CAN** complete a real-life *Enrichment* activity that involves using the quadratic formula.

Unit 11: Radical Expressions, Equations, and Trigonometric Ratios

1. I **CAN** use the *multiplication property of square roots* to simplify radicals.
2. I **CAN** simplify *radical expressions* by using the rules for *order of operations* for a given radical expression.
3. I **CAN** solve *radical* equations by solving for the given variable.
4. I **CAN** graph a given radical equation on a coordinate plane.
5. I **CAN** use the rules for *trigonometric ratios* to find the values of the missing sides of a right triangle.

Unit 12: Area, Volume, Angles, and Real-World Situations

1. I **CAN** use equations to solve real-world situations.
2. I **CAN** use formulas to find volumes of cones, cylinders, and spheres.
3. I **CAN** use properties about the angle sum and interior angles of a triangle.
4. I **CAN** use properties about the angles formed by transversals and parallel lines.

Unit 13: Set Notation

1. I **CAN** use *set notation* to communicate mathematical ideas.
2. I **CAN** understand the definition and classifications of *sets* and *subsets.*
3. I **CAN** use the *element set notation* for union, element, intersection, non-element, and null set.
4. I **CAN** find unions and intersections of sets given a description, set notation, or a graph.