**Algebra1 Test Study Notes**

**Unit 1,2 – Solving Equations**

Exponents PEMDAS

* An exponent is the base number repeated the number of times as the exponent
* Order of Operations
  + Parenthesis – Always work from the inside out
  + Exponents
  + Multiplication, Division – Left to Right
  + Addition, Subtraction - :Left to Right
* Exponent signs on parenthesis is the whole parenthesis repeated, not distributed
* Be prepared to evaluate an expression based on variables value

Add, Subtract, Multiply and Divide Real Numbers

* Two negative numbers multiplied or divided results in a positive number
* One negative number multiplied or divided by a positive number is negative
* Subtraction is really just adding negative numbers
* When adding numbers take time to utilize the sign included with the number

Distributive Property

* Term outside and multiplied by a parenthesis must be multiplied through the parenthesis
* Make sure you carry the sign with the term that is multiplying through
* Terms at the end of the parenthesis are treated the same as those multiplied from the front of the parenthesis
* Negative signs in front of the parenthesis should be treated like a negative one and multiplied through

Properties of real numbers

* These properties allow us to manipulate equations and solve for variables
  + Commutative property – Terms can be interchanged
  + Associative property – Parenthesis to associate terms with different groups
  + Identity property – Addition identity is zero, multiplication identity is one

Solving 1 and 2 step equations

* Undo equations in reverse PEMDAS order
* Combine like terms on one side of equation only
* Undo multiplication of fractions by multiplying by a reciprocal

Solving multistep equations

* Combine like terms on the same side of the equals sign
* Move terms across the equal sign by adding or subtracting the opposite term
* If the variable is eliminated and the constants are equal, it is an identity equation
* If the variable is eliminated and the constants are not equal, there is no solution

Problem Solving

* Interpret an equation from a word problem
* Utilize formulas as provided with word problems
* Uniform motion problems – Distance = Rate times Time, D=RT

Formulas

* Equations are provided, and one variable in the equation is solved in terms of other variables
* Use good solving techniques as outlined above