Pleasant Valley Community School District
GRADE 9-12 - GRADE LEVEL INDICATORS

Standard 1: Understands and applies concepts of numbers and operations				
Interval Benchmark 1: Describes the properties of numbers and number systems				
Grade Level Benchmark	**Vocabulary**	**Information**	**Skills**	**Classroom Resources**
a: Understands properties of real numbers and its subsystems	• absolute value • natural numbers • integers • rational numbers • irrational numbers • real numbers • subsets	• Knows the relationships among the subsets of the real numbers system • Understands the type of equations that can and cannot be solved within each subset	• Represents numbers within each subset • Uses the appropriate number system representation for given problem situations • Interprets numerical answers on a calculator or computer display	
b: Explores new number systems, such as vectors	• vector • magnitude • direction	• Knows what operation properties hold for operations with vectors	• Determines what operation properties hold for vector addition and subtraction • Calculates vector addition and multiplication	
c: Uses the appropriate form of a rational number (fraction, decimal, percent) in computations	• rational number • fraction • decimal • percent • equivalent formats • proportions	• Understands fractions, decimals, and percents can be expressed in various ways • Knows which rational number is most appropriate based on the context of the problem	• Converts fractions, decimals, and percents to equivalent forms • Identifies the appropriate rational number to use in a problem situation	
d: Uses the properties of roots, exponents in computations	• squaring • square root • exponent • base • expanded notation • scientific notation	• Knows squaring is the product of a whole number multiplied by itself • Knows squaring and square root are inverse operations • Knows an exponent tells how many times a base is used as a factor • Knows the rules for multiplying an dividing numbers with exponents • Knows the rules for raising a number with an exponent to a power	• Finds the square root of any number • Writes exponents in expanded notation • Simplifies expressions containing exponents • Convert positive and negative exponents	