|  |  |  |  |
| --- | --- | --- | --- |
|  | |  | |
| MPj04100690000[1] | | **Algebra 1**  **Unit 1: Relationships Between Quantities & Expression** | |
| Volume 1 Issue 1 | |  | |
| **References**  **HMH Georgia Coordinate Algebra Text**:  Unit 1: Modules 1-2  **Check with you**  **teacher for online**  **and print access:**  Online website:  my.hrw.com  **Web Resources**   * Rational & irrational <https://www.illustrativemathematics.org/content-standards/tasks/608> * Simplifying radicals   http://cms.gavirtualschool.org/Shared/Math/GSEAlgI16/GSEAlgI\_RelationshipsandExp\_Shared/GSEAlgI\_RelationshipsandExp\_Shared8.html#headingtaglink\_1   * Unit conversions <https://www.khanacademy.org/math/pre-algebra/rates-and-ratios/metric-system-tutorial/v/unit-conversion> * Polynomials   http://mathbitsnotebook.com/Algebra1/Polynomials/POoutline.html   * Polynomials   <http://www.brightstorm.com/search/?k=polynomials> | | Dear Parents Below you will find a list of concepts that your child will use and understand while completing Unit 1: Relationships Between Quantities & Expressions. Also included are references, vocabulary and examples that will help you assist your child at home. Concepts Students will Use and Understand  * The structure of expressions and the meaning of their parts in context. * Appropriateness of units of measure within context. * Similarities between the system of polynomials and the system of integers. * Addition, Subtraction, and Multiplication of polynomials is closed. * Properties of rational and irrational numbers. * Simplify and/or use the operations of addition, subtraction, and multiplication, with radicals within expressions limited to square roots. * Visual representation of radicals.  Vocabulary  * **Binomial Expression:** An algebraic expression with two unlike terms. * **Capacity:** The greatest volume that a container can hold. * **Coefficient:** A number multiplied by a variable. * **Constant Term:** A quantity that does not change its value. * **Factor:** When two or more integers are multiplied, each integer is a factor of the product. "To factor" means to write the number or term as a product of its factors. * **Irrational Number:** A number whose decimal form is nonterminating and nonrepeating. Irrational numbers cannot be written in the form a/b, where a and b are integers (b cannot be zero). So all numbers that are not rational are irrational. * **Monomial Expression:** An algebraic expression with one term. * **Polynomial function:** A ***polynomial function*** is defined as a function,   *f(x)= ao xn + a1 xn-1 + a2 xn-2 + … + an-2 x2 + an-1 x1 + an ,*where the coefficients are real numbers.   * **Pythagorean Theorem:** It is a theorem that states a relationship that exists in any right triangle. If the lengths of the legs in the right triangle are *a* and *b* and the length of the hypotenuse is *c*, we can write the theorem as the following equation: *a*2 + *b*2 = *c*2 * **Radical:** The symbol,, which is read "the bth root of a," is called a radical. * **Radicand:** The number underneath the root symbol. So, in, the *a* is called the radicand. * **Rational Number:** A number expressible in the form *a*/*b* or – *a*/*b* for some fraction *a*/*b*. The rational numbers include the integers. * **Standard Form of a Polynomial**: To express a polynomial by putting the terms in descending exponent order. * **Term:** A number, a variable, or a product of numbers and variables. * **Trinomial**: An algebraic expression with three unlike terms. | |
|  |  | |
|  | **Algebra 1 Unit 1 Practice Problems** | |
|  |  | |
| Formulas  **Perimeter:**  all sides added together  **Area:**  Length x width | Example 1 A rectangle is 5m longer than it is wide. The perimeter is 38m. Find the length & width. Example 2 Determine if is rational or irrational. Example 3 What is the simplified form of ?  **Company Name**  **Street Address**  **City, State 00000** Example 4 Find the difference. Write the answer in standard form. Example 5 A rectangle has a width of and a height of . Find an expression that represents the area as a whole. | |
|  |  | |
|  | **Answer Key**  **Example 1**  2(w) + 2(w+5)=4w + 10; 4w + 10=38; w=7; the width is 7 and the length is 12  **Example 2**  Irrational  **Example 3**  **Example 4**  **Example 5** | |
|  |  | |