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|  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 ParentsBelow 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,$\sqrt[b]{a}$, which is read "the bth root of a," is called a radical.
* **Radicand:** The number underneath the root symbol. So, in$\sqrt[b]{a}$, 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.
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|   | **Algebra 1 Unit 1 Practice Problems** |
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| Formulas**Perimeter:**all sides added together**Area:**Length x width | Example 1A rectangle is 5m longer than it is wide. The perimeter is 38m. Find the length & width.Example 2Determine if $4+\sqrt{7}= \frac{a}{b}$ is rational or irrational.Example 3What is the simplified form of $\sqrt{98}$?**Company Name****Street Address****City, State 00000**Example 4Find the difference. Write the answer in standard form.$$\left(-6x^{3}+5x-3\right)-(2x^{3}+4x^{2}-3x+1)$$Example 5A rectangle has a width of $\left(x+2\right)$ and a height of $(2x+1)$. Find an expression that represents the area as a whole. |
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|  | **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**$$7\sqrt{2}$$**Example 4** $$-8x^{3}-4x^{2}+8x-4$$**Example 5** $$2x^{2}+5x+2$$ |
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