Volume 1 Issue 1

Math 7 Unit 1
Operations with Rational Numbers

Dear Parents,
Welcome to the new school year! We are eager to work with you and your students as we learn new mathematical concepts. Below is information for Unit 1, Operations with Rational Numbers. Look for additional newsletters for future units.

Operations with Rational Numbers

By the end of this unit, students will understand:

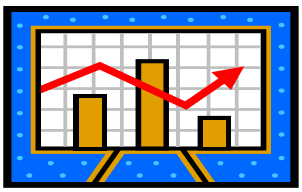
- Computation with positive and negative numbers is often necessary to determine relationships between quantities.
- Models, diagrams, manipulatives and patterns are useful in developing and remembering algorithms for computing with positive and negative numbers.
- Properties of real numbers hold for all rational numbers.
- Positive and negative numbers are often used to solve problems in everyday life.

Vocabulary

Absolute Value: The distance between a number and zero on a number line. The symbol for absolute value is| |
Associative Property: In addition or multiplication, the result of the expression will remain the same regardless of grouping: a+(b+c)=(a+b)+c
Commutative Property: The sum or product of numbers is the same no matter how the numbers are arranged: a+b=b+a
Distributive Property: The sum of two addends multiplied by a number will be the sum of the product of each addend and the number: a(b+c)=ab+ac
Integer: The set of whole numbers & their opposites Example:{…-2, -1, 0, 1, 2,…}
Inverse Operation: Operations that undo each other or are opposite, such as addition and subtraction
Natural numbers: Counting numbers that begin with 1. Example: {1, 2, 3, 4, …}
Rational numbers: The set of numbers that can be written in the form of $\frac{a}{b}$ where a & b are integers and $b \neq 0$.
Whole numbers: The set of all natural numbers and zero

For examples & help with vocabulary, visit:

http://intermath.coe.uga.edu/



Textbook Connection

McGraw Hill Georgia Math Grade 7: Pg. 3-156

Web Resources

http://mathbitsnotebook.com/Algebra1/RealNumbers/RNSignedNumbers.html

http://mathbitsnotebook.com/Algebra1/RealNumbers/RNSignedNumbersPractice.html

http://www.sheppardsoftware.com/mathgames/fruitshoot/FS_Mixed_Integers.htm

http://www.mathplayground.com/ASB_OrbitIntegers.html

http://www.mathgoodies.com/games/integer_game/

http://www.math-play.com/math-racing-subtracting-integers-game/math-racing-subtracting-integers-game.html

http://www.mathplayground.com/ASB_IntegerWarp.html

Practice Problems

1. Evaluate: $3c + (7 - a)^2 - 5b$ when a = -3, b = 5, c = -4

2. Simplify: 9(4j - 6)

3. You have $4 and you need to pay a friend $3. What will you have after paying your friend? Represent your answer on a number line.

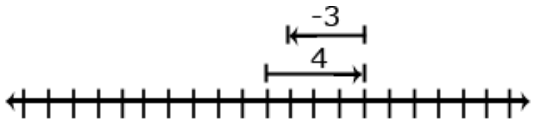
4. Your cell phone bill is automatically deducting $32 from your bank account every month. How much will the deductions total for the year?

5. It took a submarine 20 seconds to drop to 100 feet below sea level from the surface. What was the rate of the descent?

Answers:

1. $3(-4) + (7 - -3)^2 - 5(5) = -12+10^2-25 = -12+100-25 = 63$

2. 36j – 54

3. 

4 + (-3) = 1 or (-3) + 4 = 1

4. -32 + -32 + -32 + -32 + -32 + -32 + -32 + -32 + -32 + -32 + -32 + -32 = 12 ($-32) = $-384

5. $\frac{-100 \text{ feet}}{20 \text{ seconds}} = \frac{-5 \text{ feet}}{1 \text{ second}} = -5$ ft/sec