

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Review Sheet - Unit One

**KNOW YOUR VOCABULARY  
KNOW YOUR PROPERTIES**

<p><b>Write an algebraic expression for each phrase.</b></p> <p>1) 15 less than the product of 2 and r</p> <p>2) the product of 6 and t divided by 7</p> <p>3) twice the sum of x and 3</p>	<p><b>Evaluate each expression for the given value of the variables:</b></p> <p>Always use ( )</p> <p>Replace variable with given value</p> <p>Simplify</p> <p>6) <math>(2a)^2 - (b^3 - a^2)</math>, when <math>a = -3</math> and <math>b = 2</math></p> <p>7) <math>-4t - 4u^2</math>, when <math>t = -2</math> and <math>u = 4</math></p>
<p><b>Order of Operations (PEMDAS)</b></p> <p>4) <math>(4 - 6 \times 5 + 3)^2</math></p> <p>5) <math>(3^2 - 4^2)^3 + (-2)^2</math></p>	<p><b>Distribution - Use the distributive property to simplify</b></p> <p>8) <math>-5(x - 6)</math></p> <p>9) <math>3(y + 7)</math></p>

**Ordering Numbers - change to decimals**

- 1) Put in decimal form
- 2) Order
- 3) Put back in original form

Put the numbers in order from least to greatest

10)  $-\sqrt{12}$ , -3.5,  $5/3$ ,  $-2/3$

**Rational and Irrational Numbers**

11)  $7/8$

12)  $\sqrt{8}$

Rational Numbers - repeat in a pattern or end

Irrational Numbers - do not have a pattern and never end

# Foundations of Algebra

Algebra 1 CC

## Unit 1-1 Summary Sheet

Mathematical terms:

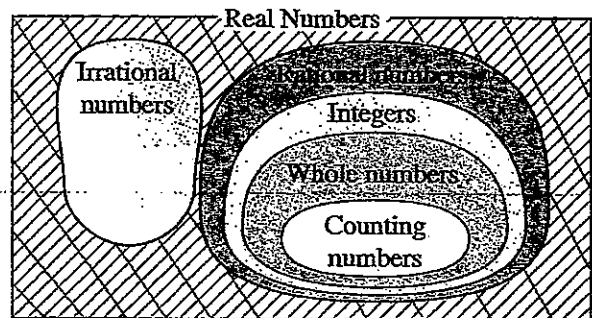
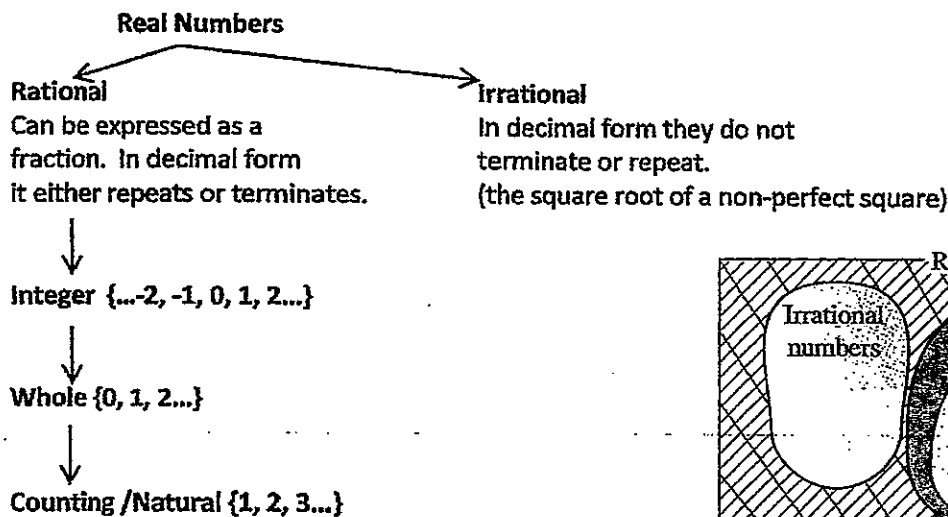
<u>Addition</u>	<u>Subtraction:</u>	<u>Multiplication</u>	<u>Division</u>
Sum	Minus	Twice	Quotient
Increased by	Less than (switch them)	Product	Divided by
More than	From (from comes first)	Times	
Plus	Decreased by	Of	
		One half of	
		One third of	
		Doubled	
		Tripled	

Order of Operations: PEMDAS

1. Perform any operation(s) inside grouping symbols such as parentheses ( ) and brackets [ ].  
A fraction bar also acts as a grouping symbol.
2. Simplify exponents (a number raised to a power).
3. Multiply and divide from left to right.
4. Add and subtract from left to right.

$\sqrt{\text{radicand}}$

**REMEMBER:**  
When you square a number you always get a positive!!!!



Each type of number is a subset (a smaller group) of the type of number above it.

## Properties of Real Numbers

a. Commutative Property of Addition and Multiplication:

i. ORDER changes

$$3+4 = 4+3$$

order changes

b. Associative Property of Addition and Multiplication:

i. Groups change

$$(3+4)+5 = 3+(4+5)$$

groups change

c. The additive identity is 0

$$6+0 = 6$$

d. The multiplicative identity is 1

$$6(1) = 6$$

e. To determine the additive inverse you change the sign (negate).

i. What number if added to your number results in the identity 0?

$$\frac{2}{3} \xrightarrow{+} -\frac{2}{3} = 0$$

f. To determine the multiplicative inverse you flip (reciprocal)

i. What number when multiplied by your number results in the identity 1?

$$\frac{2}{3} \xrightarrow{\times} \frac{3}{2} = 1$$

g. Distributive property of multiplication over addition and subtraction.

i. Helps with mental math  $3(25)$  can be thought of as  $3(20+5)$  or  $3(20) + 3(5)$

ii.  $3(x-2) = 3x-6$

$$-2(x-5) = -2x+10$$

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