

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



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

Notes

Algebra Section 2.1

Pages 64-70

**Goal:** "Graph and compare positive and negative numbers"  
"Classify numbers as whole, integer, and rational"  
"Understand and apply absolute value and opposites"



**Vocabulary:**

Whole Numbers: No fractions, no decimals, and no negatives.

Examples of Whole Numbers: 0, 1, 2, 3, 4, 5.....

Integers: Whole numbers and their Opposites, No fractions and no decimals.

Examples of Integers: .....-3, -2, -1, 0, 1, 2, 3.....

Rational Numbers: Any number that can be written as a fraction. They can be whole numbers, negative numbers, fractions, decimals, and repeating decimals.

Examples of Rational Numbers: 4, -8,  $\frac{2}{3}$ , 5.6,  $-4\frac{1}{6}$ ,  $6.\overline{135}$ ,  $\sqrt{25}$

Examples of numbers that are not whole, integer, or rational:  $\pi$ ,  $\sqrt{3}$ ,  $\sqrt{15}$

**Classifying:**

Classify the following numbers using all names that apply.

a) 5

Whole  
Integer  
Rational

b) 0.6

Rational

c) -7

Integer  
Rational

d)  $-2\frac{3}{4}$

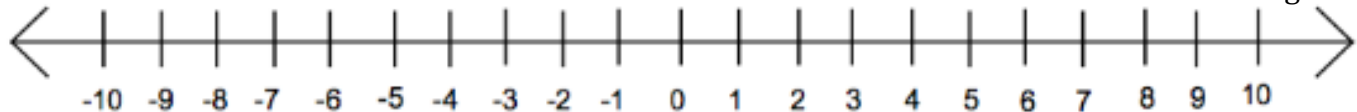
Rational

e)  $0.\overline{3}$

Rational

**Comparing:**

Smallest



Largest

On the number line where are the larger numbers located? To the right.

On the number line where are the smaller numbers located? To the left.

a)  $-17 < 14$

b)  $-22 < -15$

c)  $5.2 < 5.2003$

d)  $-0.31 < -0.301$

**Ordering:**

Order the following from least to greatest. Use the number line if needed.

a) -0.03, 0.21, 0.09, -0.22  
 -0.22, -0.03, 0.09, 0.21

b) 3, -1.2, -2, 0  
 -2, -1.2, 0, 3

c) 4.5,  $-\frac{3}{4}$ , -2.1, 0.5  
 -2.1,  $-\frac{3}{4}$ , 0.5, 4.5

d)  $\frac{1}{6}$ , 1.75,  $-\frac{2}{3}$ , 0  
 $-\frac{2}{3}$ , 0,  $\frac{1}{6}$ , 1.75

**Vocabulary:**

Opposites: Two numbers the same distance from zero but on opposite sides.

Absolute Value: The distance a number is from zero on a number line.

Examples:

The opposite of 8 is -8

The absolute Value of 8 is 8

The opposite of -9 is 9

The absolute value of -9 is 9

Complete the table.

	<b>-a (opposite of)</b>	<b> a  (absolute value)</b>
$a = -2.5$	2.5	2.5
$a = \frac{3}{4}$	$-\frac{3}{4}$	$\frac{3}{4}$
$a = -\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
$a = -0.6$	0.6	0.6

Evaluate:

a)  $|7|$

b)  $|-7|$

c)  $-(-6)$

d)  $|3.7|$

e)  $-(5)$

7

7

6

3.7

-5

Find the opposite of each term in the parentheses.

a)  $-(-4x + 5)$

b)  $-(7y - 4)$

c)  $-(-6a - 9)$

$4x - 5$

$-7y + 4$

$6a + 9$