

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

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

Notes

Algebra Section 2.1

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**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: 0, 1, 2, 3... (No negatives, fractions, or decimals)

Integers: ...-3, -2, -1, 0, 1, 2, 3... (Positive and negative whole numbers- no fractions and decimals)

Rational Numbers: Any number that can be expressed as a fraction

**Classifying:**

Classify the following numbers using all names that apply.

a) 5

b) 0.6

c) -7

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

e) -24

Whole  
Integer  
Rational

Rational

Integer  
Rational

Rational

Integer  
Rational

**Comparing:**

Compare using: >, <, ≥, ≤, or = (fill in the missing space)

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

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

Ex:  $-17 < 14$

Ex:  $-22 < -15$

Ex:  $5.2 < 5.2003$

Ex:  $0.31 > 0.301$

**Helpful Hints when Comparing:**

\* **Positive** numbers are always larger.

\*When comparing two negative numbers the one with the smaller absolute value is actually bigger.

\* When comparing decimals (positive or negative), use the same number of decimal places (You can add zeros as placeholders if necessary.

\*To compare fractions, you need a common denominator.

\* To compare fractions to decimals and vice versa, make both fractions or both decimals.

## Ordering

Order the following from least to greatest, then classify each number using all of the names that apply.

Ex: -0.03, 0.21, 0.09, -0.22

-0.22, -0.03, 0.09, 0.21

Ex: 3, -1.2, -2, 0

-2, -1.2, 0, 3

Ex: 4.5,  $-\frac{3}{4}$ , -2.1, 0.5

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

Ex:  $\frac{1}{6}$ , 1.75,  $-\frac{2}{3}$ , 0

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

Ex: 3.6, -1.5, -0.31, -2.8

-2.8, -1.5, -0.31, 3.6

Ex: The apparent magnitude of a star is its brightness as observed from Earth. The greater the magnitude, the dimmer the star. Order the stars from brightest to dimmest.

Star	Arcturus	Sirius	Vega
Magnitude	-0.6	-1.47	0.03

Sirius, Arcturus, Vega

## Vocabulary:

Opposites: Two numbers the same distance from 0, but on opposite sides.

Absolute Value: The distance a number is from 0 on a number line

### Example:

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.

### Try These:

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