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

Accentuate the Negative

Introduction

**T**he first number system you ever used as a child was the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers.

* They are made up of the numbers you used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ how many of something. ( )

**A**s you got older you realized that you needed a symbol to represent nothing. The symbol used to represent nothing is \_\_\_\_\_\_\_\_\_\_\_. As soon as you used this new symbol, you were using a new set of numbers called the \_\_\_\_\_\_\_\_\_\_\_\_ numbers.

* \_\_\_\_\_\_\_\_\_\_\_numbers are all of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers and \_\_\_\_\_\_\_\_.

( )

**T**hen, as you got even older and more sophisticated, you began to see a need to represent numbers smaller than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These numbers are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are made up of all of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers and their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers are numbers that are the \_\_\_\_\_\_\_\_\_\_ distance from \_\_\_\_\_\_\_\_\_\_\_\_ on a number line in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_directions.

( )

**J**ust when you thought you could not get more sophisticated, you realized that there needed to be ways to represent a \_\_\_\_\_\_\_\_\_ of something. These numbers are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers. They are numbers that can be written as a \_\_\_\_\_\_\_\_\_\_ or a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ using \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Examples would be…
* Can you think of a number that cannot be written as a \_\_\_\_\_\_\_\_\_\_\_\_\_?

**N**ow, just when you think there can’t be any other numbers, SURPRISE, there are.

They are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers and they are numbers that \_\_\_\_\_\_\_\_\_\_\_\_\_\_ be written as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ using only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**T**he operations that you are familiar with are +, -, x, ÷, and exponents. Another operation is finding the **\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_**of a number. The symbol for this is \_\_\_.

$\sqrt{4}$ means what number multiplied by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ equals 4?

$\sqrt{ 2 }$ = \_\_\_\_\_

* $\sqrt{1}$ = \_\_\_\_\_
* $\sqrt{4}$ = \_\_\_\_\_
* $\sqrt{9 }$ = \_\_\_\_\_
* $\sqrt{ }$ = \_\_\_\_\_
* $\sqrt{ }$ = \_\_\_\_\_
* $\sqrt{ }$ = \_\_\_\_\_
* $\sqrt{ }$ = \_\_\_\_\_
* $\sqrt{ }$ = \_\_\_\_\_
* $\sqrt{ }$ = \_\_\_\_\_

All of the numbers we have talked about are in one BIG group called the \_\_\_\_\_\_\_\_\_\_\_\_\_ numbers.

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

Accentuate the Negative

Introduction

Place the following numbers on the number line above at the appropriate place.

-3, 3, -5, 5, -4, 4, -1, 1, -2

These numbers are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are all \_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers

and their \_\_\_\_\_\_\_\_\_\_\_\_\_\_. ***Opposite*** integers are integers the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Place the following numbers on the number line above at the appropriate place.

2.7, -2.7, -3.8, 3.8, - ½, ½, 4 ¾, -4 ¾

These numbers are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are

numbers that can be expressed as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As you move to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the number line the value of the numbers

become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As you move to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the number line the value of the numbers

become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This symbol \_\_\_\_\_\_\_\_\_\_\_\_ means greater than. This symbol \_\_\_\_\_\_\_\_\_\_\_\_ means less than.

This symbol \_\_\_\_\_\_\_\_\_\_\_\_ means greater than or equal to.

This symbol \_\_\_\_\_\_\_\_\_\_\_\_ means less than or equal to.

This symbol \_\_\_\_\_\_\_\_\_\_\_\_ means equal to. This symbol \_\_\_\_\_\_\_\_\_\_\_\_ means not equal to.

***Absolute value*** is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

|-4| is read “the absolute value of –4” which is equal to \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Write an integer to represent each quantity.**

1. 8 degrees below zero \_\_\_\_\_\_\_\_\_\_\_\_
2. a loss of $32 \_\_\_\_\_\_\_\_\_\_\_\_
3. 2365 feet above sea level \_\_\_\_\_\_\_\_\_\_\_\_
4. in golf 6 strokes under par \_\_\_\_\_\_\_\_\_\_\_\_
5. in football a loss of 14 yards \_\_\_\_\_\_\_\_\_\_\_\_
6. 31 degrees below zero \_\_\_\_\_\_\_\_\_\_\_\_

Simplify each of the following:

1. the opposite of –7 \_\_\_\_\_\_\_\_\_\_\_\_
2. |-3| = \_\_\_\_\_\_\_\_\_\_\_\_
3. –(-4) = \_\_\_\_\_\_\_\_\_\_\_\_
4. the opposite of |-7| = \_\_\_\_\_\_\_\_\_\_\_\_

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

Accentuate the Negative

Introduction

**T**he first number system you ever used as a child was the **NATURAL** numbers or **COUNTING** numbers.

* They are made up of the numbers you used to **COUNT** how many of something.

**( 1, 2, 3, 4, 5,…….)**

**A**s you got older you realized that you needed a symbol to represent nothing. The symbol used to represent nothing is **ZERO (0)**. As soon as you used this new symbol, you were using a new set of numbers called the **WHOLE** numbers.

* **WHOLE** numbers are all of the **COUNTING**  numbers and **ZERO**

**(0, 1, 2, 3, 4, 5, ……….. )**

**T**hen, as you got even older and more sophisticated, you began to see a need to represent numbers smaller than **ZERO**. These numbers are called **INTEGERS.** They are made up of all of the **WHOLE** numbers and their **OPPOSITES**.

* **OPPOSITE** numbers are numbers that are the **SAME** distance from **ZERO** on a number line in **DIFFERENT** directions.

**(…..…-3, -2, -1, 0, 1, 2, 3,……….. )**

**J**ust when you thought you could not get more sophisticated, you realized that there needed to be ways to represent a **PART** of something. These numbers are called **RATIONAL** numbers. They are numbers that can be written as a **FRACTION** or a **RATIO** using **INTEGERS**.

* Examples would be…  **0.4, 1.35, ½ , 9/11**
* Can you think of a number that cannot be written as a **FRACTION/RATIO**?

**N**ow, just when you think there can’t be any other numbers, SURPRISE, there are.

They are called **IRRATIONAL** numbers and they are numbers that **CAN NOT** be written as a **FRACTION/RATIO** using only **INTEGERS**.

**T**he operations that you are familiar with are +, -, x, ÷, and exponents. Another operation is finding the **SQUARE ROOT** of a number. The symbol for this is$\sqrt{ }$**(RADICAL)**

$\sqrt{4}$ means what number multiplied by **ITSELF** equals 4?

$\sqrt{ 2 }$ = **????????**

1 x1 = 1 **\*\*We could keep**

1.3 x 1.3 = 1.69 **multiplying and**

1.4 x 1.4 = 1.96 **we will never**

??????????????????? **find a number**

1.415 x 1.415 = 2.002225 **that we can**

1.42 x 1.42 = 2.0164 **multiply by itself**

1.43 x 1.43 = 2.0449 **to equal exactly**

1.45 x 1.45 = 2.1025 **2!!!! All non-**

1.5 x 1.5 = 2.25 **perfect squares**

2 x 2 = 2 **are irrational!!!**

* $\sqrt{1}$ = **1**
* $\sqrt{4}$ = **2**
* $\sqrt{9 }$ = **3**
* $\sqrt{16 }$ = **4**
* $\sqrt{ 25 }$ = **5**
* $\sqrt{ 36 }$ = **6**
* $\sqrt{49 }$ = **7**
* $\sqrt{ 64 }$ = **8**
* $\sqrt{ 81 }$ = **9**

All of the numbers we have talked about are in one BIG group called the **REAL** numbers.

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

Accentuate the Negative

Introduction

Place the following numbers on the number line above at the appropriate place.

-3, 3, -5, 5, -4, 4, -1, 1, -2

These numbers are called **INTEGERS**. They are all **WHOLE** numbers

and their **OPPOSITES**. ***Opposite*** integers are integers the **SAME DISTANCE FROM ZERO ON A NUMBER LINE**

Place the following numbers on the number line above at the appropriate place.

2.7, -2.7, -3.8, 3.8, - ½, ½, 4 ¾, -4 ¾

These numbers are called **RATIONAL NUMBERS** They are

numbers that can be expressed as **RATIO OR FRACTION USING ONLY INTEGERS**

As you move to the **RIGHT** on the number line the value of the numbers

become **LARGER/GREATER (+)**.

As you move to the **LEFT** on the number line the value of the numbers

become **SMALLER/LESS (-)**.

This symbol **>** means greater than. This symbol **<** means less than.

This symbol **≥** means greater than or equal to.

This symbol **≤**means less than or equal to.

This symbol **=** means equal to. This symbol **≠** means not equal to.

***Absolute value*** is **HOW FAR FROM ZERO A NUMBER IS ON THE NUMBER LINE**

|-4| is read “the absolute value of –4” which is equal to **4**

**Write an integer to represent each quantity.**

1. 8 degrees below zero **-8**
2. a loss of $32 **-32**
3. 2365 feet above sea level **+2365**
4. in golf 6 strokes under par **-6**
5. in football a loss of 14 yards **-15**
6. 31 degrees below zero **-31**

Simplify each of the following:

1. the opposite of –7 = **7**
2. |-3| = **3 (THE ABSOLUTE VALUE OF -3 IS +3)**
3. –(-4) = **4 (THE OPPOSITE OF NEGATIVE 4 IS +4)**
4. the opposite of |-7| = **-7 (THE OPPOSITE OF THE ABSOLUTE VALUE OF -7 IS +7)**