

9-5-19

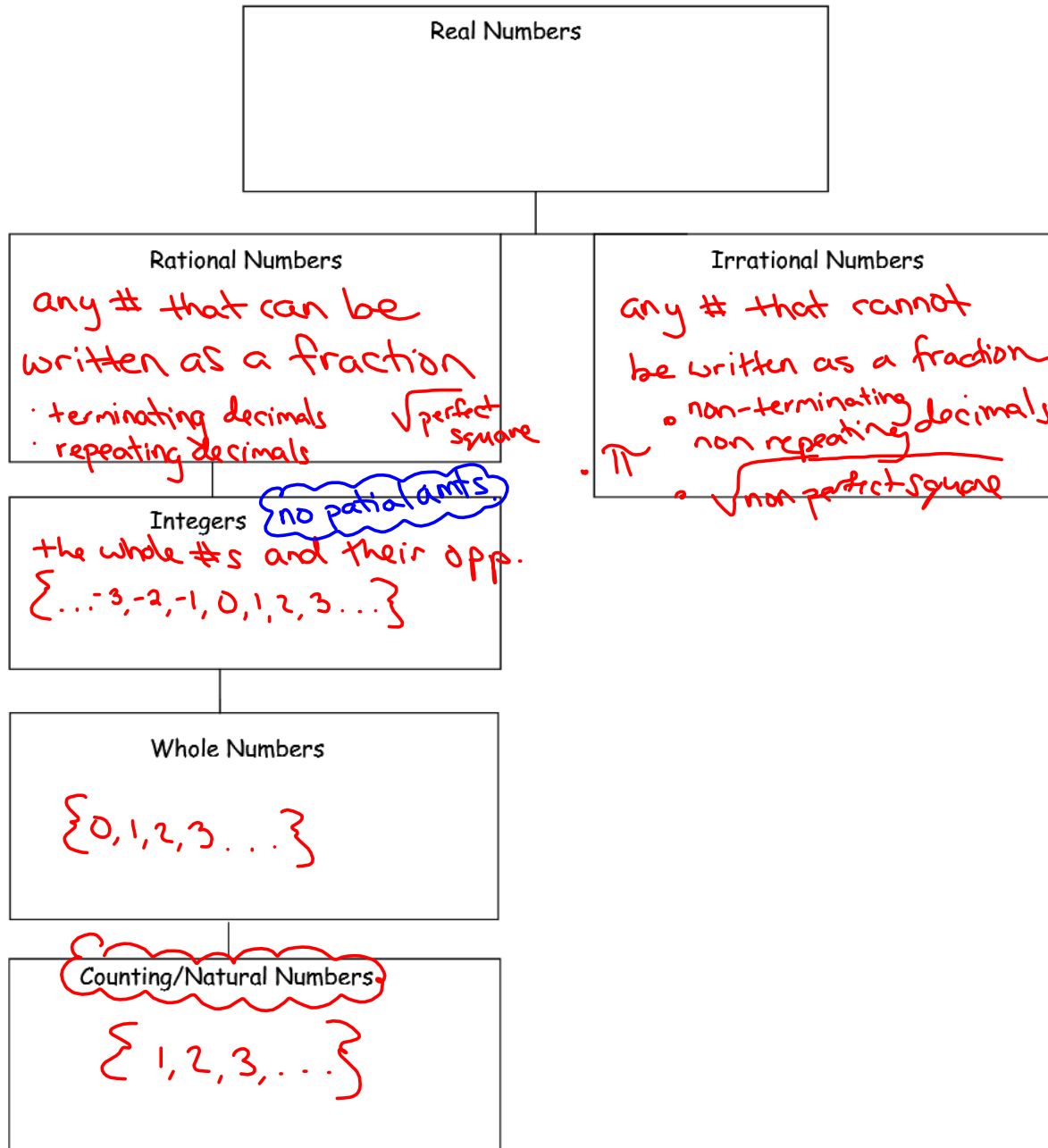
Aim: SWBAT distinguish between the sets of Real Numbers, find absolute values and opposites.

HW: Packet Pages 4 - 5

Do Now: Complete the following.

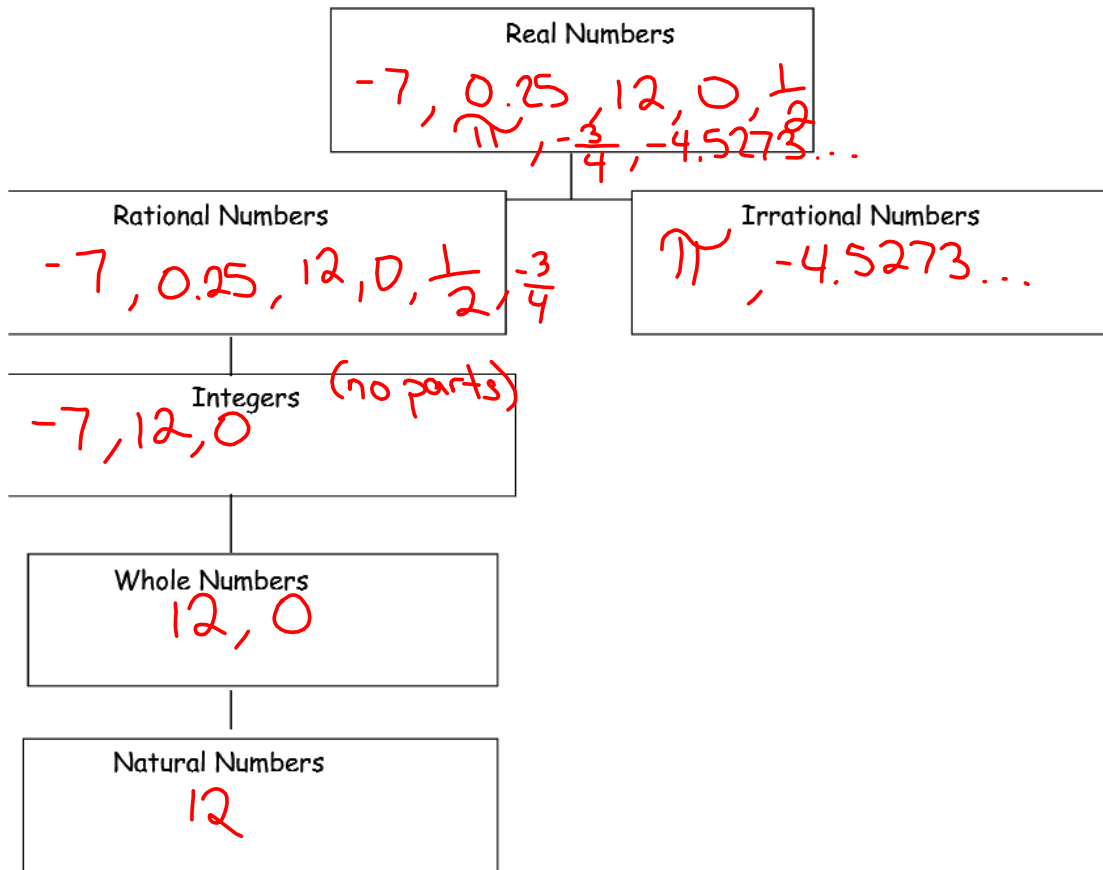
- Write your full name on the cover of the math packet.
- Show me your course information sheet signature.
- Hand me your "Who Am I" activity sheet.

AIM: SWBAT distinguish between the sets of Real Numbers, find absolute values & opposites.



Place each number in ALL the sets it belongs to.

-7      0.25      12      0       $\frac{1}{2}$        $\pi$        $-\frac{3}{4}$       -4.5273...



Answer each question with...

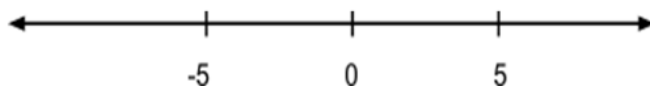
- 1) Whole Numbers are Integers.
- 2) Real Numbers are Irrational
- 3) Rational Numbers are Irrational
- 4) Integers are Natural Numbers
- 5) Whole Numbers are Real Numbers

ALWAYS      SOMETIMES      NEVER

A	S	N
A	S	N
A	S	N
A	S	N
A	S	N

**Notes:**

**Opposite numbers** are the same distance from zero on a number line in opposite directions. For example 5 and -5 are opposites. They are both 5 spaces away from zero.



Zero is a special integer because it is neither positive nor negative.

Why is zero an integer? because it's a whole #

**Comparing Integers:** > is greater than < is less than

**Examples:**  $36 > 12$  is read "36 is greater than 12"  
 $15 < 29$  is read "15 is less than 29"

The number **farther right** on the number line is the **larger** number.

Ex.  $15 < 25$        $92 > 63$        $0 < 12$   
 $-5 < 0$        $-5 > -18$        $-12 < 12$

**Ordering Integers:** Order from least to greatest.

$-5, -9, 0, -3$   $-9, -5, -3, 0$        $-2, 7, -5, -1$   $-5, -2, -1, 7$

**\*\*The three questions most often missed.**

- \*1. Name a number that is not an integer?  $\frac{1}{2}$
- 2. Name the largest negative integer.  $-1$
- 3. Name the smallest positive integer.  $1$

**Absolute Value** measures the distance a number is from zero on the number line. Distance is always POSITIVE, therefore, Absolute Value is ALWAYS positive.

The symbol for absolute value is " $|$   $|$ ."

$|4|$  "What is the absolute value of 4?"  $|4| =$   $4$

$|-4|$  "What is the absolute value of -4?"  $|-4| =$   $4$

**True or False**  $-4 = 4$  FALSE       $|-4| = |4|$  TRUE  
 $4 = 4$

The negative symbol "-" means **opposite**. For example the "opposite of 4" is -4.

Simplify the expression. (Start from the inside and work it out)

\*1)  $-(-4)$   $4$     2)  $-(-(-4))$   $-4$     3)  $-[-(-(-4))]$   $4$     4)  $-(-(-(-4)))$   $-4$

"The opp. of neg. 4"

5)  $-|-4|$   $-4$     6)  $-(-|-4|)$   $4$     7)  $---|-4|$   $-4$

$5 - 2$  ← subtraction

$-3$  ← negative

"the opposite of 7"  
 $-7$

## HOMEWORK - SETS OF NUMBERS

**\*\*Use the chart we made in class to help you answer these questions!\*\***

Answer the following with....	SOMETIMES	ALWAYS	NEVER
1) Counting Numbers are Whole Numbers.	S	A	N
2) Whole Numbers are Real Numbers.	S	A	N
3) Counting Numbers are Integers.	S	A	N
4) Integers are Counting Numbers.	S	A	N
5) Counting Numbers are Rational.	S	A	N
6) Real Numbers are Irrational.	S	A	N
7) Integers are Rational Numbers.	S	A	N
8) Rational Numbers are Whole Numbers.	S	A	N
9) Whole Numbers are Rational.	S	A	N
10) Rational Numbers are Irrational.	S	A	N

State **ALL** of the sets of numbers that each of the following belongs to:

- |                    | Real  | Irrational | Rational | Integer | Whole | Natural |
|--------------------|-------|------------|----------|---------|-------|---------|
| 11) 0              | _____ | _____      | _____    | _____   | _____ | _____   |
| 12) -5             | _____ | _____      | _____    | _____   | _____ | _____   |
| 13) 3.421123...    | _____ | _____      | _____    | _____   | _____ | _____   |
| 14) 2.56           | _____ | _____      | _____    | _____   | _____ | _____   |
| 15) 20             | _____ | _____      | _____    | _____   | _____ | _____   |
| 16) $-\frac{3}{5}$ | _____ | _____      | _____    | _____   | _____ | _____   |
| 17) $0.\bar{6}$    | _____ | _____      | _____    | _____   | _____ | _____   |

Write the **OPPOSITE** and then **ABSOLUTE VALUE** of each integer:

18) 7 \_\_\_\_\_

19) -25 \_\_\_\_\_

20) 106 \_\_\_\_\_

21) 0 \_\_\_\_\_

Complete the Statement with **<** or **>**.

22) -6 \_\_\_\_\_ 4

23) -2 \_\_\_\_\_ -4

24) 0 \_\_\_\_\_ 8

Match the integer expression with the verbal expression:

\_\_\_\_\_ 25)  $-|12|$

A. the opposite of negative twelve

\_\_\_\_\_ 26)  $|-12|$

B. the absolute value of twelve

\_\_\_\_\_ 27)  $-|-12|$

C. the opposite of the absolute value of negative twelve

\_\_\_\_\_ 28)  $-(-12)$

D. the absolute value of negative twelve

\_\_\_\_\_ 29)  $|12|$

E. the opposite of the absolute value of twelve

Simplify the expression:

30)  $-(-9)$

31)  $|-16|$

32)  $-|-16|$

The table below shows the distances of the runners from the finish line when the winner won the race. Use the table to answer Questions 33 - 35.

Runner	Distance (ft)
Sarah	-16
Beth	-2
Juanita	0
Tamika	-9
Ingrid	-36

33) Who won the race? \_\_\_\_\_

34) Who finished further back, Sarah or Tamika? \_\_\_\_\_

35) Arrange the girls' names in order from first-place to last-place finish.

(Hint: use a number line to help you)

\_\_\_\_\_

1<sup>st</sup> Place

2<sup>nd</sup> Place

3<sup>rd</sup> Place

4<sup>th</sup> Place

5<sup>th</sup> Place