



BLOG



- Be Ready to Work Everyday!
- I will not ask you to do something you are not prepared for!
- Give it your best shot, if it is wrong that is ok. We can learn from your mistakes.



Foundations of Algebra

Unit 1: Number Sense & Quantity

Notes

Unit 1: Number Sense & Quantity

Learning Goal #1.1: Operations & Applications of Integers

After completion of this unit, you will be able to...

Learning Target #1: Operations with Integers & Decimals

- Add, subtract, multiply, and divide integers using a variety of strategies (number lines, counters, Mental Math)
- Compare integers
- Apply Operations of integers using real world applications

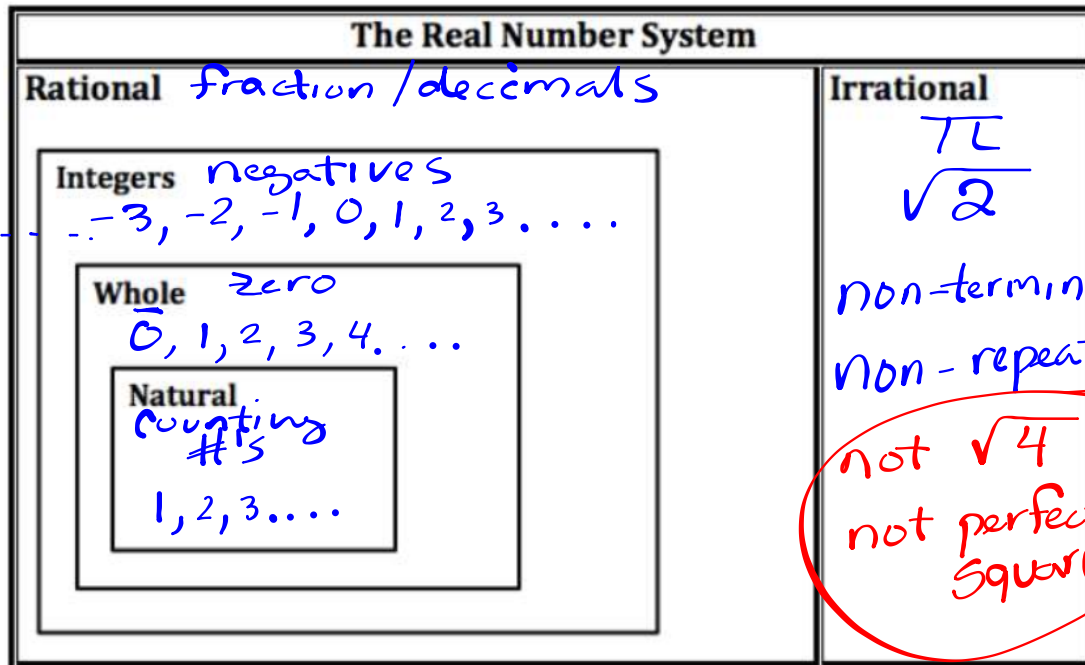
Timeline for Unit 1

Monday	Tuesday	Wednesday	Thursday	Friday
			^{1st} Intro & Syllabus Day	^{2nd} MI TESTING
^{5th} Day 1 The Real Number System & Adding Integers	^{6th} Day 2 Subtracting, Multiplying, & Dividing Integers	^{7th} Day 3 Real World Applications	^{8th} Day 4 1.1 Learning Goal assessment	

Tutoring Schedule for Algebra

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	NONE	NONE	Mr. Webb 7:45 – 8:15 Room 1205	Mr. Watson 7:45 – 8:15 Room 1208	Mr. Watson 7:45 – 8:15 Room 1208
PM	Mrs. Petersen 3:30 – 4:30 Room 1210	Mr. Webb 3:30 – 4:30 Room 1205	Mrs. Jackson 3:30 – 4:30 Room 1210	Mrs. Jackson 3:30 – 4:30 Room 1210	NONE

Day 1: The Real Number System and Adding Integers

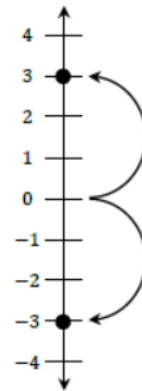
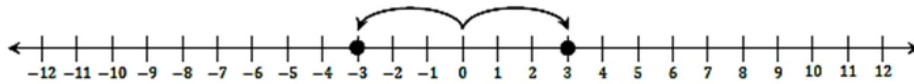


Directions: Classify the following numbers and then circle the most specific classification for that number.

Number	Classifications
$\frac{1}{4}$	Rational - fraction
6	Natural
6.75	Rational - decimal
3.4921...	Irrational - non terminating
-15	Integer - negative
$\sqrt{7}$	Irrational - not perfect square
0	Whole - zero
5π	Irrational π non terminating

Understanding Number Lines

The set of whole numbers and their opposites, including zero, are called **integers**.



1. What is the relationship between -3 and 3? How far away are both -3 and 3 from zero?

they are opposite #'s / they are both 3 away from zero.

2. On a horizontal number line, where are negative values located?

left side

3. On a vertical number line, where are positive values located?

top side

4. Circle the larger number: *closer to 0*

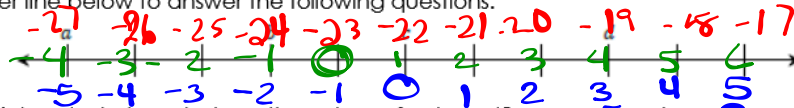
1. -5 or -9

2. -3 or -1

3. -45 or -48

4. -123 or -120

5. Use the number line below to answer the following questions:



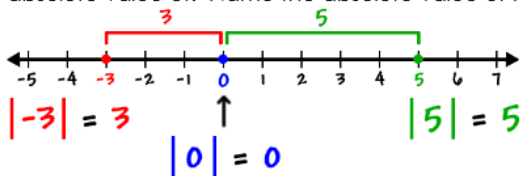
a. If zero is located at c, what are the values of a, b, & d? $a = -5$, $b = -2$, $d = 3$

b. If b is equal to -24, what are the values of a, c, & d? $a = -27$, $c = -22$, $d = -19$

c. If zero is located between a and d, what are possible values for a, b, c, and d?

$a = -4$, $b = -1$, $c = 1$, $d = 4$

Absolute Value is the ^{positive} distance a value is from zero. We use $| |$ when expressing numbers that we want the absolute value of. Name the absolute value of the following numbers:



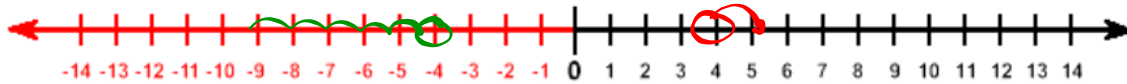
a. $|4| = 4$ b. $|-6| = 6$

c. $|-24| = 24$ d. $|0| = 0$

e. The distance from -8 is to zero is 8 units.

make it a positive

Modeling Integer Addition with Number Lines



Using the number line, find the sum of the following problems:

a. $4 + 1 = 5$

b. $-4 + -5 = -9$

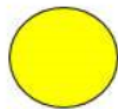
c. $-4 + 6 = 2$

d. $2 + -8 = -6$

e. $-1 + -7 = -8$

f. $-4 + 4 = 0$

Modeling Integer Addition with Counters

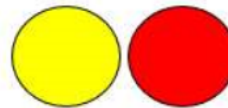


Positive Integer



Negative Integer

A positive integer paired with a negative integer form a zero pair. The value of a zero pair is 0.



We are going to use counters to model integer addition and then using our counters create a number sentence to represent the modeling process. Use + signs for positive integers and - signs for negative integers.

a. $5 + -3$

b. $-7 + 3$

c. $-6 + 4$

d. $3 + -1$






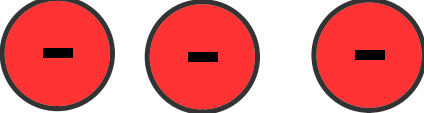
$+2$

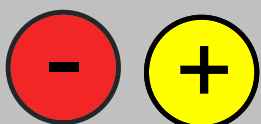


-4

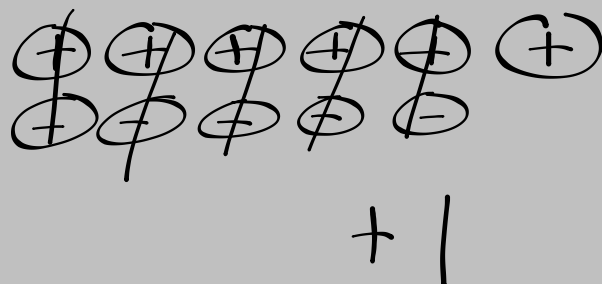
-2

$+2$

 	From Packet
a. $5 + -3$	
 	
b. $-7 + 3$	

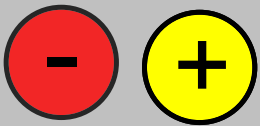


a. $6 + -5$



b. $-4 + -3$





a. $3 + -8$

b. $-2 + -7$

Foundations of Algebra

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Think About it:**P N**

Z Analyze the following addition problems and determine if the sum of the integers will be positive, negative, or zero. You may use the number line to help you if needed.

a. $5 + 2 =$ P

b. $-4 + -3 =$ N

c. $-3 + 6 =$ P

d. $4 + -8 =$ N

e. $-1 + -3 =$ N

f. $-5 + 5 =$ Z

g. $-7 + 4 =$ N

h. $9 + -2 =$ P

i. $-3 + 8 =$ P

1. If you add two positive numbers, your sum will always be positive

2. If you add two negative numbers, your sum will always be negative

3. How do you determine if your sum will be positive or negative when adding a positive and negative integer together?

the sign of the larger absolute value of a number
whichever # is furthest from zero determines the sign

4. When will your sum equal zero?

opposite signs of same #

$$-9 + 7$$

Learning Names

Additional Practice

Foundations of Algebra
Day 1 – Adding Integers

Unit 1: Number Sense & Quantity

Name: _____ Practice

Practice Assignment

0 25 50 75 100

1	2	3	4	5
$4 + 6 =$	$3 + 9 =$	$2 + 7 =$	$1 + 4 =$	$7 + 10 =$
$5 + -2 =$	$6 + -5 =$	$8 + -4 =$	$9 + -3 =$	$7 + -3 =$
$2 + -7 =$	$2 + -3 =$	$4 + -7 =$	$2 + -7 =$	$5 + -9 =$
$8 + -3 =$	$10 + -5 =$	$5 + -6 =$	$2 + -3 =$	$4 + -5 =$
$9 + -6 =$	$7 + -2 =$	$8 + -3 =$	$7 + -3 =$	$10 + -7 =$
$-3 + 4 =$	$-1 + 7 =$	$-3 + 7 =$	$-2 + 4 =$	$-7 + 5 =$
$5 + 1 =$	$4 + 2 =$	$7 + 4 =$	$5 + 3 =$	$6 + 3 =$
$-6 + 7 =$	$-5 + 9 =$	$-6 + 9 =$	$-4 + 7 =$	$-2 + 6 =$
$-5 + 3 =$	$-6 + 2 =$	$-3 + 6 =$	$-7 + 5 =$	$-8 + 5 =$
$-2 + -6 =$	$-3 + 3 =$	$-4 + -5 =$	$-7 + -5 =$	$-5 + -7 =$

Score: ___/10

Score: ___/10

Score: ___/10

Score: ___/10

Score: ___/10

2. Explain (in complete sentences) what absolute value means.

3. Find the absolute value of the following: a. $|5| =$ _____ b. $|-87| =$ _____ c. $|-23| =$ _____ d. $|0| =$ _____

4. Check all the columns that apply to the numbers below. Then circle the check that most specifically describes that number.

Number	Real	Irrational	Rational	Integer	Whole	Natural
-7	✓		✓	✓		
0	✓		✓	✓	✓	
$\frac{2}{5}$						
$0.\overline{34}$						
$\sqrt{12}$						
2.578...						
6.42						
$\frac{12}{4}$						
9						
$\frac{1}{2}^\pi$						

5. Explain (in a complete sentence) what makes the natural numbers and whole numbers different.

6. Explain (in a complete sentence) what makes the rational and irrational number numbers different.

Integer Card Game of War



1. Split the deck in half and determine who is player 1 and player 2
2. Flip one of your counters: Red- Subtract, Yellow- Add
3. Then each person will flip over a card and the first person to find the sum or difference collects the cards.
4. The person with the most cards at the end wins.

