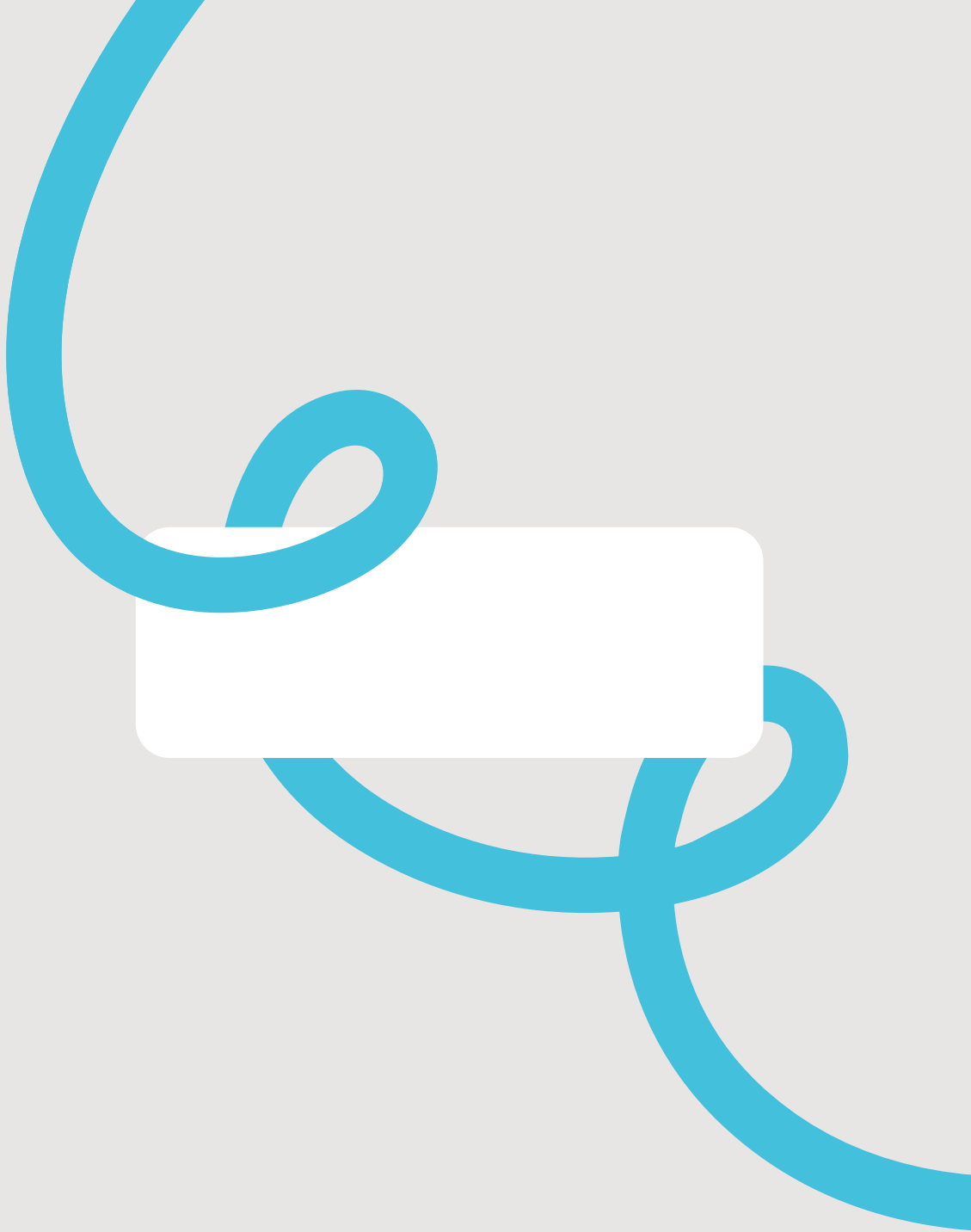




8/13/75

Write Objective & Standard

Do Now: Pg 13 #'s 25-27

25) $s = 4, t = 8$
 $(s + t)^3$
 $(4 + 8)^3$
 $(12)^3 = 12 \times 12 \times 12$
 $= 144 \times 12$
 $= 1728$

26) $s^4 + t^2 + s \div 2$
 $4^4 + 8^2 + 4 \div 2$
 $256 + 64 + 2$
 $= 322$

27) $(st)^2 \div (st^2)$
 $\frac{(4 \times 8)^2}{(4 \times 8^2)} = \frac{32^2}{4 \times 64} = \frac{1024}{256} = 4$

"evaluate" = substitute

"cubed" = x^3

$\begin{array}{c} \square \\ s \end{array}^3 = s \cdot s \cdot s$

$8^3 = 8 \cdot 8 \cdot 8$
 $\quad \quad \quad \vee$
 $\quad \quad \quad 64 \cdot 8 = 512$

"squared" = x^2

$\begin{array}{c} \square \\ s \end{array}^2$

$s \times s = s^2$

x^4 = "x to the power of four"

x^5 = "x to the power of five"

Real Numbers and the Number Line

Lesson Vocabulary - Define using glossary in notebooks.

1. square root

2. radicand

3. radical

4. perfect square

5. set

6. element of a set

7. subset

8. rational numbers

9. natural numbers

10. whole numbers

11. integers

12. irrational numbers

13. real numbers

14. inequality

(list can be found
in textbook, Pg. 16)

Math Notebook

- name

- subject - Alg. 1

- Hour

Due Friday 8/15!

Notebook checks Today!

- Ms. Nez will call up students one by one.

Notebooks should have

- 4 vocabulary words in 4x4 table

- 5 Do Now questions

- 5 vocab. words frayer model

- 3 Do Now questions

- 14 Vocab. definitions

- 3 Do Now questions

8/15/25

Algebra I - sub Notes

Objective: Use order of operations to solve.

Do Now: Pg. 14 #37-40. Students will complete in math notebooks.

$$\begin{aligned} 37. \quad & 2[(8-4)^5 - 8] \\ & 2[4^5 \div 8] \\ & 2[1024 \div 8] \\ & 2[128] \\ & = \boxed{256} \end{aligned}$$

$$\begin{aligned} 38. \quad & 3[(4-2)^5 - 20] \\ & 3[(2)^5 - 20] \\ & 3[32 - 20] \\ & 3[12] \\ & = \boxed{36} \end{aligned}$$

$$\begin{aligned} 39. \quad & 10 - (2^3 + 4) \div 3 - 1 \\ & 10 - (8 + 4) \div 3 - 1 \\ & 10 - 12 \div 3 - 1 \\ & 10 - 4 - 1 \\ & = \boxed{5} \end{aligned}$$

$$\begin{aligned} 40. \quad & \frac{22 + 1^3 + (3^4 - 7^2)}{2^3} \\ & \frac{22 + 1 + (81 - 49)}{8} \\ & \frac{28 + 32}{8} = \frac{55}{8} = 6.875 \end{aligned}$$

RACES Writing Practice

Students will complete in math notebooks.

RACES Poster is on back wall.

What does P.E.M.D.A.S. stand for?

Explain the order of operations.

NWEA testing starts 8/19

Algebra I Notes 8/18/25

Do Now

$\sqrt{x}$ ← radicand
 ↑
 radical

↓ Perfect Squares

$\sqrt{1}$	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
$\sqrt{100}$	10

$$1) \sqrt{81} = 9$$

$$2) \sqrt{\frac{9}{16}} = \frac{\sqrt{9}}{\sqrt{16}} = \frac{3}{4}$$

$$3) \sqrt{64} = 8$$

$$4) \sqrt{\frac{1}{36}} = \frac{\sqrt{1}}{\sqrt{36}} = \frac{1}{6}$$

$$\left(\frac{1}{2}\right)^2 = \frac{1}{4}$$

$$\sqrt{\frac{1}{4}} = \frac{\sqrt{1}}{\sqrt{4}} = \frac{1}{2}$$

Lesson Practice

Ex. 1

To which subsets of real numbers does each number belong?

3) 15:

6) $-\sqrt{16}$

4) -1.4583

7) $\frac{3}{10}$

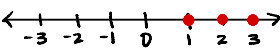
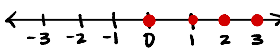
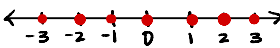
5) $\sqrt{57}$

8) -0.45

Ex. 2.

What is the order of $\sqrt{4}$, 0.4, $-\frac{2}{3}$, $\sqrt{2}$ and -1.5 from least to greatest?

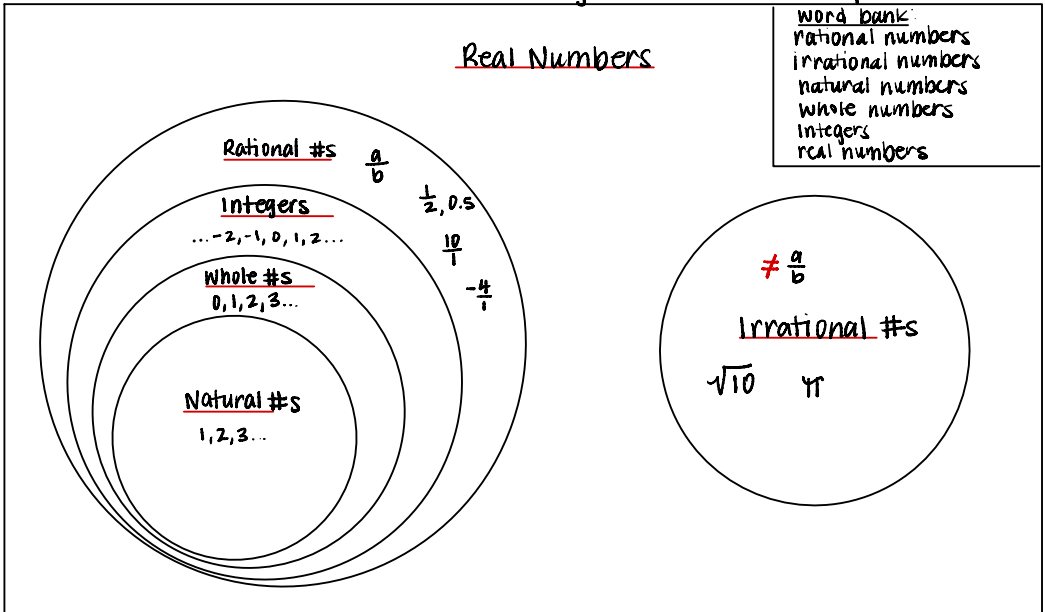
Independent Practice: Lesson Check Pg. 20, #s 1-8

1	rational numbers	any number you can write in the form $\frac{a}{b}$, where a and b are integers and $b \neq 0$.
2	natural numbers	$\{1, 2, 3, 4, \dots\}$ 
3	whole numbers	$\{0, 1, 2, 3, \dots\}$ 
4	Integers	$\{\dots -3, -2, -1, 0, 1, 2, 3, \dots\}$ 
5	Irrational Numbers	cannot be rationalized as $\frac{A}{B}$.
6	Real Numbers	All rational and irrational numbers.

8/25/25

Directions: Draw graphic organizer in your notes.

Then label each section with one vocabulary word and add examples.



Proper
Heading :

Lesson Check, Pg. 20, #s 1-8

Name

Date

Algebra I

Hour

Pg. 23 Vocabulary 1-4 Properties of Real Numbers

8/26 - 8/27

- use glossary to find definition & example of each vocabulary word.

	Vocabulary	Definition	Example	Non-example
1)	Equivalent Expressions	(use glossary!)	$3a + 2a = 5a$	$3a + 3a \neq 5a$
2)	Deductive Reasoning		$12 + 16 = 28$ $3 \times 18 = 54$ $18 + 18 + 18 = 54$	An odd # plus an odd # <u>equals</u> an odd number. (False!)
3)	Counterexample		Apples 🍏 granny smith 🍏	Algebra I students are freshmen. Freshmen are required to take the course.

DO NOW:

$$\begin{aligned}
 1. \quad & 4^4(5) + 3(11) \\
 & 256(5) + 33 \\
 & 1280 + 33 \\
 & = \boxed{1313}
 \end{aligned}$$

$$\begin{aligned}
 2. \quad & \left(\frac{27-13}{8-3}\right)^3 = \left(\frac{14}{5}\right)^3 \\
 & = \boxed{\frac{2744}{125}}
 \end{aligned}$$

$$\begin{aligned}
 3. \quad & \left(\frac{3(6)}{17-5}\right)^4 \\
 & = \left(\frac{18}{12}\right)^4 \\
 & = \left(\frac{3}{2}\right)^4 \\
 & = \boxed{\frac{81}{16}}
 \end{aligned}$$

Lesson 1-4

Pg. 23-24 Textbook

Read Properties of Real Numbers

Properties of Real Numbers	Definition ↓	Examples ↓
Commutative Property of Addition		$a + b = b + a$ $18 + 54 = 54 + 18$
Commutative Property of Multiplication		
Associative Property of Addition		
Associative Property of Multiplication		
Identity Property of Addition		
Identity Property of multiplication		
Zero property of multiplication		
Multiplication property of -1		

Properties of Real Numbers

Name	Definition	Example
Commutative Property of Addition	changing the order does not change the sum.	$a + b = b + a$ $18 + 54 = 54 + 18$
Commutative Property of Multiplication	changing the order does not change the product.	$a \cdot b = b \cdot a$ $12 \cdot \frac{1}{2} = \frac{1}{2} \cdot 12$
Associative Property of Addition	changing the grouping of the addends doesn't change the sum.	$(a + b) + c = a + (b + c)$ $(23 + 9) + 4 = 23 + (9 + 4)$
Associative Property of Multiplication	changing the grouping of the factors doesn't change the product.	$(a \cdot b) \cdot c = a \cdot (b \cdot c)$ $(7 \cdot 9) \cdot 10 = 7 \cdot (9 \cdot 10)$
Identity Property of Addition	The sum of any real number and zero is the original number.	$a + 0 = a$ $5\frac{3}{4} + 0 = 5\frac{3}{4}$
Identity Property of multiplication	The product of any real number and one is the original number.	$a \cdot 1 = a$ $67 \cdot 1 = 67$
Zero property of multiplication	The product of any number and zero is zero.	$a \cdot 0 = 0$ $18 \cdot 0 = 0$
Multiplication property of -1	The product of -1 and a is -a.	$-1 \cdot a = -a$ $-1 \cdot 9 = -9$

Distributive Property	a number is "distributed" by multiplication through out the parenthesis.	$a(b+c) = ab + ac$ $3(x+2) = 3x + 6$
Inverse Property of Addition	Any number combined with its opposite equals zero.	$x + (-x) = 0$ $8 + (-8) = 0$
Inverse Property of Multiplication	Any number multiplied by its inverse equals 1.	$x \cdot \frac{1}{x} = 1$ $2 \cdot \frac{1}{2} = 1$

8/29 DO NOW:

A stage designer paid \$4 per square foot for flooring to be used in a square room. If the designer spent \$600 on the flooring, about how long is a side of the room? Round to the nearest foot.

- How is the area of a square related to its side length?
- How can you estimate the length of a side of a square?

Station Activity: Real Numbers

Name

8/29/25

Hour

- Write heading on separate paper.
- Label Station Number on your paper. Total of 6 stations.
- Talk with group members!
- When finished, move counter clockwise to next station.
- When all six stations are completed, turn in to blue box.

9/4/25 Properties Worksheet

23. $30 + 48 + 14$

$30 + 14 + 48$

$(30 + 14) + 48$

$50 + 48$

98

Commutative Property of Addition

Associative Property of Addition

Simplify

Simplify

9/9 Do Now

How many pounds of Arabica coffee costing \$28 per pound should you mix with 1 pound of Robusta coffee costing \$8.75 per pound to make a coffee blend that costs \$12.00 per pound?

9/8 - 9/9 Work days

- 1) Lesson 1-4 Lesson Check Pg. 26 #1-6 Due 9/9
- 2) Complete Property Worksheet Due 9/10
- 3) Complete Station Activity
- 4) Early Finishers - Practice Pg. 26 #7-35 Odds Due 9/10

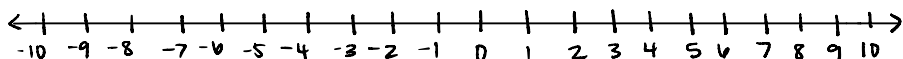
9/11 DO NOW

A robot submarine dives 803 ft. to the ocean floor. It rises 215 ft. as the water gets shallower. Then the submarine dives 2619 ft. into a deep crevice. Next, it rises 734 ft. to photograph a crack in the wall of the crevice. What is the location of the crack in relation to sea level?

9/12 Do Now

A reef explorer dives 25 ft. to photograph brain coral and then rises 16 ft. to travel over a ridge before diving 47 ft. to survey the base of the reef. Then the diver rises 29 ft. to see an underwater cavern. What is the relation of the cavern in relation to sea level?

Lesson 1-5 Adding and Subtracting Real Numbers



Lesson Vocabulary - Write definitions and examples using glossary.

Vocabulary	Definition	Example
Absolute Value		
Opposites		
Additive Inverses		

Notes:

	Same sign	Different sign
Addition	When addends have the same sign, add their absolute values. The sum has the same sign as the addends. <u>Example:</u> $5 + 8 = 13$ $-2 + -5 = -7$	When addends have different signs, subtract their absolute values. Use the sign of the greater addend. <u>Example:</u> $-6 + 4 = -2$ $45 + (-10) = 35$
Subtraction	To Subtract a real number, add its opposite $a - b = a + (-b)$. <u>Example:</u> $3 - 5 = 3 + (-5) = -2$ $3 - (-5) = 3 + 5 = 8$	

Practice:

a) $-12 + 7$

e) $-8 - (-13)$

b) $-18 + (-2)$

f) $3.5 - 12.4$

c) $-4.8 + 9.5$

c) $9 - 9$

d) $\frac{3}{4} + (-\frac{5}{6})$

9/15/25

Lesson 1-6: Multiplying and Dividing Real Numbers

DO NOW:

1) $12(-8) =$

2) $24(0.5) =$

3) $-\frac{3}{4} \cdot \frac{1}{2} =$

4) $(-3)^2 =$

New vocabulary - define using glossary.

1) Multiplicative Inverse

2) Reciprocal

Multiplying Real Numbers

- The product of two real numbers with **different** signs is **negative**.

$$2(-3) = -6$$

- The product of two real numbers with the **same** sign is **positive**.

$$2 \cdot 3 = 6$$

Dividing Real Numbers

- The quotient of two real numbers with **different** signs is **negative**.

$$-20 \div 5 = -4$$

- The quotient of two real numbers with the **same** sign is **positive**.

$$20 \div 5 = 4$$

- The quotient of 0 and any nonzero real number is 0. The quotient of any real number and 0 is **undefined**.

$$0 \div 8 = 0$$

$$8 \div 0 = \text{undefined}$$

Simplifying square roots.

- A negative square root is represented by $-\sqrt{\quad}$.
- Every positive real number has a positive and negative square root.
- The symbol $\pm$ in front of the radical indicates **both** square roots.

Ex. $-\sqrt{25} =$

$$\pm \sqrt{\frac{4}{49}}$$

Practice

a) $\sqrt{64}$

b) $\pm \sqrt{16}$

c) $-\sqrt{121}$

d) $\pm \sqrt{\frac{1}{36}}$

9/16/25 DO NOW

A skydiver's elevation changes by -3600 ft in 4 min. after the parachute opens. What is the average change in the sky diver's elevation each minute?

Inverse Property of Multiplication $a(\frac{1}{a}) = 1$

- Multiplicative inverse is the reciprocal of a number.

Dividing Fractions

$$\frac{a}{b} \div \frac{c}{d} = \frac{(\frac{a}{b})}{(\frac{c}{d})} \rightarrow \frac{(\frac{a}{b})(\frac{d}{d})}{(\frac{c}{d})(\frac{d}{d})} \rightarrow \frac{(\frac{a}{b})(\frac{d}{c})}{1} \rightarrow \boxed{\frac{a}{b} \cdot \frac{d}{c}}$$

Write division using a fraction bar. Multiply by Multiplicative Inverse Inverse Property of Multiplication Simplify.

Practice

1) $\frac{1}{4} \div \frac{2}{3}$

2) $\frac{2}{5} \div \frac{1}{2}$

3) $\frac{4}{7} \div \frac{1}{8}$

Example 4 Pg. 41 Dividing Fractions

What is the value of $\frac{x}{y}$ when $x = -\frac{3}{4}$ and $y = -\frac{2}{3}$?

1. Rewrite the expression. $\Rightarrow \frac{x}{y} = x \div y$

2. Substitute $-\frac{3}{4}$ for x and $-\frac{2}{3}$ for y . $\Rightarrow = -\frac{3}{4} \div (-\frac{2}{3})$

3. Multiply by the reciprocal of $-\frac{2}{3}$. $\Rightarrow = -\frac{3}{4} \cdot (-\frac{3}{2})$

4. Simplify. Since both factors are negative, the product is positive. $\Rightarrow = \boxed{\frac{9}{8}}$

Practice a) What is the value of $\frac{3}{4} \div (-\frac{5}{2})$?

b) Is $\frac{3}{4} \div (-\frac{5}{2})$ equivalent to $-(\frac{3}{4} \div \frac{5}{2})$? Explain.

Test Monday 9/22/25

- Unit One
- Real Numbers
- Properties
- Add, Subtract, Multiply, Divide
Real Numbers

Open Note Test

- Make sure notes are complete.

Name: _____

Algebra I

Date: _____ Bell: _____

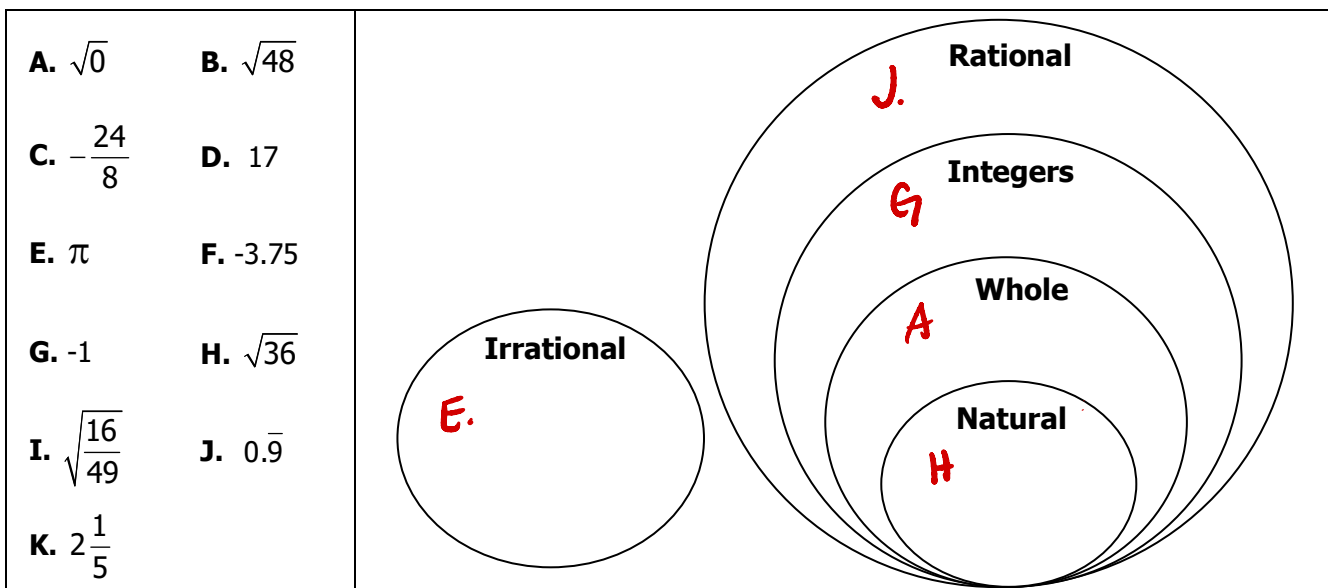
Unit 1: Algebra Basics

Quiz 1-1: The Real Numbers & Properties

For Questions 1 – 5: Put an X in each set the number belongs to.

	R (Real)	I (Irrational)	Q (Rational)	Z (Integers)	W (Whole)	N (Natural)
1. 10	X		X	X	X	X
2. $\frac{5}{6}$	X		X			
3. $\sqrt{24}$	X	X				
4. 0						
5. $-\sqrt{81}$						

6. Place the LETTER of each value in its location in the real number system below.



Directions: Circle the best answer.

7. Which does **not** represent an integer?

~~A. 0~~

~~B. $-\frac{18}{2}$~~

~~C. $\sqrt{9}$~~

D. $\frac{4}{5}$

8. Which is an irrational number?

A. $\sqrt{21}$

~~B. $3\frac{5}{8}$~~

~~C. $2.\bar{4}1$~~

~~D. $-\sqrt{13}$~~

9. Which statement is true?

~~A. $\sqrt{81}$ is an irrational number~~

~~B. 0 is a natural number~~

C. $4.\bar{6}$ is a rational number

~~D. -9 is a whole number~~

10. Which statement is false?

~~A. All whole numbers are integers.~~

B. All real numbers are irrational numbers.

~~C. All natural numbers are whole numbers.~~

~~D. All whole numbers are real numbers.~~

For Questions 11 – 18: Identify the property that justifies the statement.

Use the property bank below for spelling!

11. If $y = -5$, then $-5 = y$	12. $8a + 4 = 4 + 8a$ Comm
13. $12(x + 4) = 12x + 48$ Distr.	14. $n^2 \cdot 0 = 0$ Zero
15. $8 + (2 + 6) = (8 + 2) + 6$ Ass.	16. If $3^2 = 9$ and $9 = \sqrt{81}$, then $3^2 = \sqrt{81}$
17. $-7 = -7$	18. $6s \cdot \frac{1}{6s} = 1$ Inverse

Property Bank:

Commutative
Associative
Distributive
Identity
Inverse
Property of Zero
~~Reflexive~~
~~Symmetric~~
~~Transitive~~

PEMDAS

19. $17 - 5 \cdot 4 \div 2$

$17 - 20 \div 2$

$17 - 10$
 $= 7$

20. $40 - 32 \div 8 + 5 \cdot 2$

$40 - 4 + 10$

$36 + 10$

$= 46$

$40 - 4 + 10$

$40 - 14$

$40 + 6$

The distributive property 9/23

Objective: Use the distributive property to simplify expressions.

New Vocabulary.	In your own words	Example
Distributive Property	"giving" a number throughout parenthesis	$a(b+c)$
term	a number &/or a variable together	$2x$ or $3x^2y$ or -12
constant	something that stays the same a number	7
coefficient	The number that comes before the variable	$2x$
like terms	Terms with the same variable(s)	$3x^2$ and $7x^2$
variable	a letter	x, y, a

Distributive Property

Let a, b , and c be real numbers.

$$a(b+c) = ab+ac \quad \text{or} \quad (b+c)a = ab+ac$$

"a times b plus c equals a times b plus a times c."

Distribute the 4 throughout the parenthesis using multiplication.

$$4(20+b) = 4(20) + 4(b)$$

$$= 80 + 24$$

$$= 104$$

$$a(b-c) = ab-ac \quad \text{or} \quad (b-c)a = ab-ac$$

"a times b minus c equals a times b minus a times c."

Distribute the 7 throughout the parenthesis using multiplication.

$$7(30-2) = 7(30) - 7(2)$$

$$= 210 - 14$$

$$= 196$$

Example 1: Simplifying Expressions.

1) $3(x+8)$

2) $(5b-4)(-7)$

Practice

1) $5(x+7)$

$$5x + 35$$

2) $12(3 - \frac{1}{6}t)$

$$12(3) - 12(\frac{1}{6}t)$$

$$36 - \frac{12}{1}(\frac{1}{6}t)$$

$$36 - \frac{12}{6}t$$

$$36 - 2t$$

3) $(0.4 + 1.1c)3$

4) $(2y-1)(-y)$

Example 2. Rewriting Fraction Expressions.

What sum or difference is equivalent to $\frac{7x+2}{5}$?

DO NOW

1. $\frac{2+3y+1-y}{3+2y}$

5. $\frac{y^2}{y}$

2. $3x^2 + x + x^2 - 2x$

6. $\frac{4y^4}{2y}$

3. $2y(4y)$

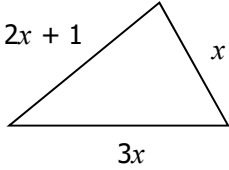
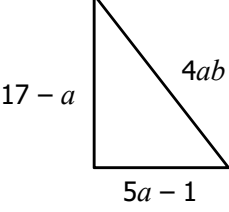
4. $2x(4y)$

Name:	Date: 9/23/25
Topic:	Class:

Main Ideas/Questions	Notes/Examples		
Distributive Property Recall: $a(b + c) = ab + ac$ or $a(b - c) = ab - ac$	1. $7(x + 4)$ $7x + 28$	2. $2(b - 3)$ $2b - 6$	3. $-4(y + 3)$ $-4y - 12$
	4. $-5(m - 2)$ $-5m + 10$	5. $-1(y - 9)$ $-y + 9$	6. $8(4 - b)$ $32 - 8b$
	7. $-4(-w - 10)$ $4w + 40$	8. $5(2m - 3)$ $10m - 15$	9. $-3(2x - 4)$ $-6x + 12$
	10. $3(m + n)$ $3m + 3n$	11. $x(y + 4)$ $xy + 4x$	12. $d(c - 4)$ $cd - 4d$
	13. $6a(b + 2c)$ $6ab + 12ac$	14. $2(x - y + 8)$ $2x - 2y + 16$	15. $x(2y - 5z + 1)$ $2xy - 5xz + x$
	16. $\frac{1}{4}(8x - 4)$	17. $\frac{1}{6}\left(\frac{3}{5}x + 18\right)$	18. $-\frac{1}{8}\left(\frac{4}{5}x - 24\right)$
Distribute AND Combine!	To simplify an expression means to ensure there are no parentheses and no like terms . In order to do this, distribute first (if needed), then combine like terms.		
Examples	19. $8(2x - 3) - 6x$	20. $9(2k - 4) - 2(7k - 12)$	
	21. $10 - (y - 6) - y$	22. $6 + 8(4w - 7) - (2w + 1)$	
	23. $\frac{9}{4}\left(\frac{10}{3}x - 4\right) - \frac{1}{4}(2x - 8)$	24. $\frac{7}{8}\left(\frac{4}{5}x + 16\right) + \frac{3}{5}\left(\frac{1}{2}x - 10\right)$	

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
Parts of an Expression	$7x + 3 - 5x + 8 + 4x - 1$ Variable Terms (Terms WITH a variable) $7x, -5x, 4x$ Coefficients (Number NEXT TO a variable) $7, -5, 4$ Constant Terms (Terms WITHOUT a variable) $3, 8, -1$
Combining Like Terms	You can simplify an algebraic expression by combining like terms. This means to combine common variable terms and constant terms. Example: Simplify the expression below: $7x + 3 - 5x + 8 + 4x - 1 = \boxed{6x + 10}$
Examples	Directions: Simplify each expression. 1. $3x + 6x$ $= 9x$ 3. $7m - 5m - 6$ $= 2m - 6$ 5. $7p - 1 - 9p + 5$ $7p - 9p - 1 + 5$ $= \boxed{-2p + 4}$ 2. $9a - 10a$ 4. $9 - 6w + 5$ 6. $5h - 6 - 8 + 7h$ 7. $5x + 7y - x + 2y + 3x$ 8. $26a + 2b - 4a + 10b$

with Exponents	Terms with the same exponents or combination of variables and exponents are considered like terms. When combined, be sure to NOT change their exponents!	
Examples	9. $5x^2 + 7x^2$	10. $-15n^5 + 4n^5$
	11. $8c^3 - 7c^3 + 16c^3$	12. $8k^2 - k - 5k + 7 - 2k^2$
	13. $-4a^2b + 7 + 10a^2b$	14. $x^2 + 2xy - 7xy + 4y^2$
	15. $a^2 + 7ab - 10ab + b^2$	16. $4x^2 - 7 + 2x - 3x^2 + 8x - 6$
Geometric Applications	Directions: Give the perimeter of each figure as a simplified expression.	
	17. 	18. 
	19. 	20. 