1. Copy homework in your planner.

2. Update table of contents.

3. Open your notebook to page 7 and have your homework visible for me to check.

4. Complete the warm up in the smartpal.

Name: _____ **Unit 1:** The Real Numbers

Date: _____ **Per:** _____ **Homework 10:** The Real Number System

Directions: Name **all sets** to which each value belongs.

1. $-\sqrt{49}$ Rational, Integer

2. -5.3125 Rational

3. π Irrational

4. $|-24|$ Rational, Integer, whole, natural

5. $9-3^2$ Rational, integer, whole

6. 4^{-2} Rational

7. Place the **LETTER** in the smallest set that contains that value.

A. $0.\overline{592}$ **B.** $\frac{30}{3}$

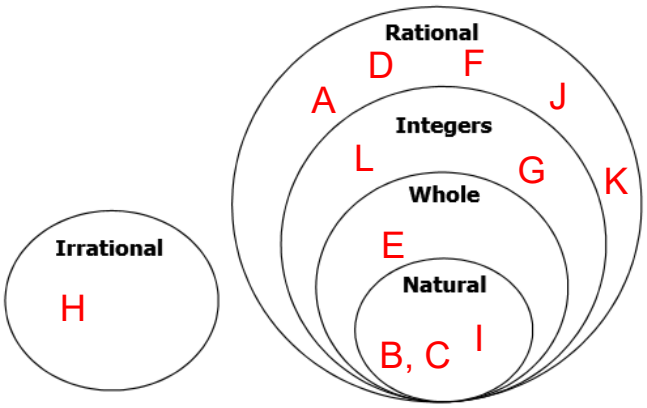
C. $\sqrt{144}$ **D.** $-1\frac{2}{7}$

E. 0 **F.** 2.06532

G. $-|-13|$ **H.** $-\sqrt{95}$

I. $\sqrt{324}$ **J.** $-\frac{17}{4}$

K. $\sqrt{\frac{9}{16}}$ **L.** $\sqrt[3]{-125}$



8. Circle all values that are **rational numbers**.

18 $-\sqrt{75}$ $6\frac{1}{14}$ $\frac{15}{3}$ $\sqrt{6}$ $\sqrt[3]{64}$ $-0.\overline{4}$

Directions: Answer **always**, **sometimes**, or **never**.

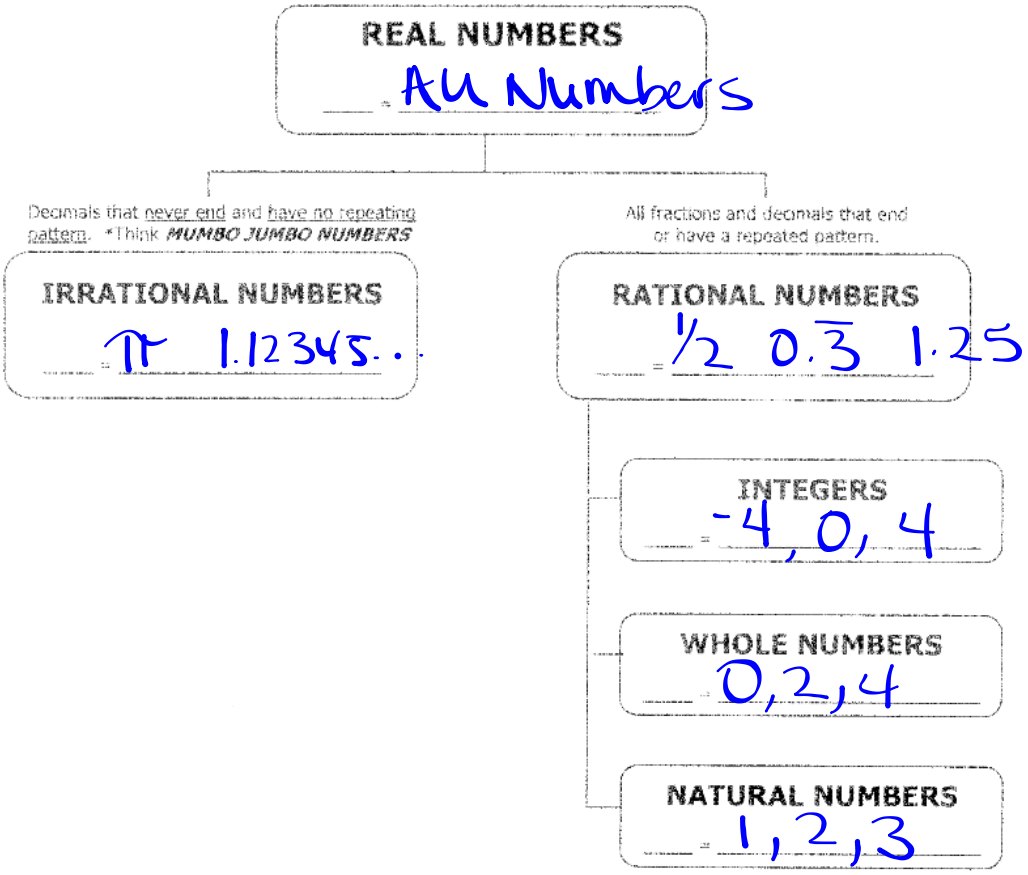
9. Natural numbers are always integers.

10. Irrational numbers are never rational numbers

11. Rational numbers are always real numbers.

12. Square roots are sometimes rational numbers.

The Real Number System



Directions: Name all sets of numbers to which each number belongs.

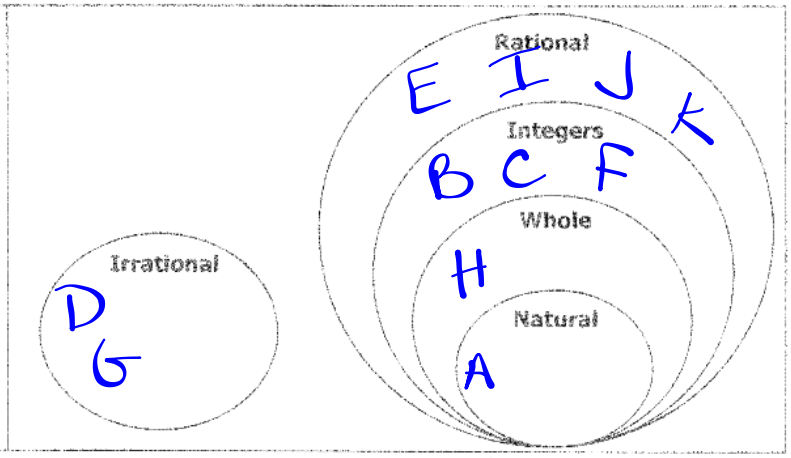
1. 30 N, W, I, R
2. -11 I, R
3. $5\frac{4}{7}$ R
4. $\sqrt{21}$ IR
5. 0 W, I, R
6. $-\sqrt{9}$ I, R
7. $\frac{6}{3}$ N, W, I, R
8. π IR
9. $5.\overline{3}$ R

$0\sqrt{9}$ -3

Organizing the Real Numbers

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

A. 7	B. $-\frac{36}{12}$
C. $-\sqrt{36}$	D. π
E. 6.48	F. -2
G. $-\sqrt{10}$	H. 0
I. $2\frac{1}{6}$	J. $-0.\overline{7}$
K. $\sqrt{\frac{4}{81}}$ $\frac{2}{9}$	



1. Which expression does **not** name an integer?
   A. -15 C. 0
   B. $\frac{6}{14}$ D. $\frac{12}{6}$

2. Which expression represents an irrational number?
   A. $0.\overline{18}$ C. $\frac{2}{3}$
   B. $\sqrt{75}$ D. $\sqrt{3}-\sqrt{3}$

3. Which number is **not** a whole number?
   A. 8 C. 0
   B. -10 D. $\frac{18}{3}$

4. Which of the following is a true statement?
   A. -9 is a whole number C. 0 is a natural number
   B. $\sqrt{25}$ is an irrational number D. $\frac{3}{3}$ is a rational number

5. Which of the following statements is false?
   A. All real numbers are rational numbers. C. All natural numbers are integers.
   B. Every integer is a rational number. D. Every whole number is a real number.

6. Give an example of a number that is a whole number, but not a natural number. 0

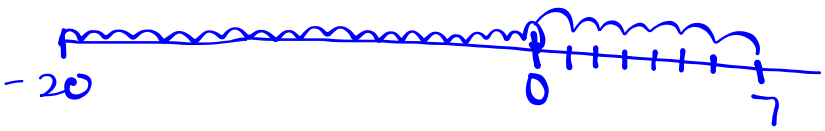
7. Give an example of a real number that is not rational. π 3.141529...

8. Give an example of a rational number that is not an integer. 3/4

Name: Date:

Topic: Class:

Main Ideas/Questions	Notes/Examples
What are Integers?	Whole numbers and their opposites ; ..-2, -1, 0, 1, 2 . . .
The Number Line	-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8
Writing Integers	**Directions:** Write an integer for each situation. 1. a 3-yard gain 3 2. 8 degrees below normal -8 3. a $75 deposit 75 4. a 21-pound loss -21 5. 5 miles above sea level 5 6. a $40 deduction -40 7. 2 strokes under par -2 8. a $15 surcharge 15
Comparing & Ordering Integers	**Directions:** Place a < or > in the circle to complete each statement. 9. -12 < 5 ; 10. -7 > -23 ; 11. 1 > -6 ; 12. -18 < -15 13. 20 > -25 ; 14. -13 < 0 ; 15. -36 > -40 ; 16. -29 < -28 **Directions:** Order each set of integers from least to greatest. 17. {4, 0, -9, 2, -5, -1, 13} -9, -5, -1, 0, 2, 4, 13 18. {-27, 21, -24, 16, -11, -8} -27, -24, -11, -8, 16, 21 19. {12, -4, 9, -10, -18, 15} -18, -10, -4, 9, 12, 15 20. {-52, -65, 37, -33, 48, -31} -65, -52, -33, -31, 37, 48
Absolute Value Always Positive	Distance between a number & zero. Notation: |x| ← Read as: "The absolute value of x." **Directions:** Evaluate each expression. 21. |7| 7 ; 22. |-20| 20 ; 23. |-4| 4 24. |18| 18 ; 25. |35| 35 ; 26. |-11| 11



NAME _____ DATE _____ PERIOD _____

Problem-Solving Practice

Integers and Absolute Value

SCUBA For Exercises 1–3, use the table below. The table shows the depths of scuba diving attractions on a certain dive tour.

Attractions	Depth (ft)
Coral reef	−22
Modern shipwreck	−98
Old shipwreck	−108
Cave	−16

1. What is the absolute value of the depth of the coral reef?

2. Hiromi took pictures of both shipwrecks. Is the absolute value of the depth of the modern shipwreck greater than or less than the absolute value of the depth of the old shipwreck?

3. Sandra swam in the cave and around the coral reef. Which of the two attractions is closer to the surface of the water?

4. **SCIENCE** The liquid in Beaker A has a temperature of −4°C. The liquid in Beaker B has a temperature of 2°C. Which temperature has the greater absolute value?

5. **STEPS** Catesby ran up 16 flights of stairs. Write an integer to represent this situation.

6. **CELL PHONE** Nazir used more minutes on his cell phone than his plan allows. He now owes his parents $15. Write an integer to represent this debt.

7. **CAVE** The entrance of a cave is at an elevation of 14 meters. The lowest part of the cave is at an elevation of −86 meters. Which elevation has the lower absolute value?

8. **MONEY** Larry lost 45 cents when it fell out of his jacket pocket while he was playing. Write an integer to represent this loss.

Integers

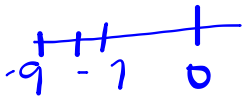
PRACTICE

1. Which statement is true?

   A. -82 > 85
   B. 4,117 < -2,654
   C. -601 > -456
   D. -72,643 > -81,249

2. Which integer is less than -7?

   F. -9
   G. -6
   H. 0
   J. 8



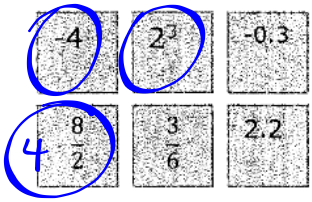
3. The temperatures this week were recorded in the chart below.

Day	Temperature
Monday	-6
Tuesday	-11
Wednesday	-3
Thursday	-9
Friday	-4

On which day was the temperature the warmest?

   A. Monday
   B. Tuesday
   C. Wednesday
   D. Friday

4. Circle all of the integers below.



5. Which list of integers is ordered from greatest to least?

   A. -17, -16, -15
   B. -15, -16, -17
   C. -17, -15, -5
   D. -16, -17, -15

6. Write an integer to represent each situation:

   a) 10 degrees above zero
   b) a loss of 16 dollars
   c) a gain of 5 points
   d) 8 steps backward

7. Which expression has the smallest value?

   A. |-19|
   B. |-34|
   C. |11|
   D. |47|

8. Which statement is true?

   F. -17 < -19
   G. -13 > -20
   H. -11 > -9
   J. -6 < -8

9. |-5| + |2| =

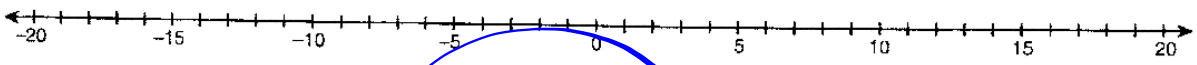
   A. -7
   B. -3
   C. 3
   D. 7

10. Which of the following is not an integer?

    F. 9
    G. 0
    H. 0.1
    J. -2

Why Do Flies Always Bring Their Stopwatches to Parties?

Write an integer for each exercise. Find the point on the number line that corresponds to the integer. Write the letter of the exercise above the number line at that point.



Write an integer for each situation.

- (E) 3 units to the left of 0
- (S) the opposite of 8
- (N) 15 ft above sea level
- (E) a gain of 6 yd
- (J) 5° below zero
- (N) a deposit of $20
- (E) 14 steps backward
- (T) four seconds after liftoff
- (I) a loss of ten pounds
- (W) one floor down
- (E) 19 m below sea level
- (H) the opposite of −11

Write an integer for each expression.

- (A) −(17)
- (I) −(−14)
- (E) |−1|
- (R) |8|
- (U) $-n$ if $n = 16$ −16
- (G) $-n$ if $n = -16$ −(−16) 16
- (B) −(12 + 8)
- (H) |16 − 11|
- (E) −|9| −9
- (S) −|−15|
- (A) $|x|$ if $x = -12$
- (F) $-|x|$ if $x = -12$ −|−12|

Write an integer for each question.

- (N) Which is greater, 2 or −13?
- (T) Which is greater, −7 or −6?
- (E) Which is greater, −11 or 9?
- (C) Which is less, −18 or −4?
- (U) Which is less, |−20| or 19?
- (H) Which is less, 0 or −(−3)?

The table below gives the starting point, direction, and length of arrows drawn on the number line. Complete the table by writing the endpoint of each arrow.

Starting Point	Direction, Length	Endpoint
0	negative, 4	(M)
−2	positive, 9	(Y)
−2	negative, 9	(L)
5	positive 13	(F)
−10	positive, 23	(V)

Multi-Part Lesson 3 PART 1

NAME _____ DATE _____ PERIOD _____

Homework Practice

Integers and Absolute Value

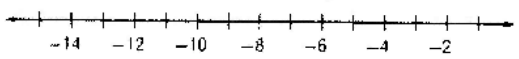
Write an integer for each situation.

1. a drop of 200 feet
2. an expansion of 3 cubic meters
3. earn 10 points
4. reduce by 8 inches

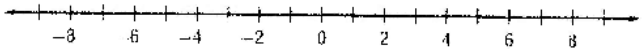
Graph each set of integers on a number line.

5. {−4, −3, 1, 5}

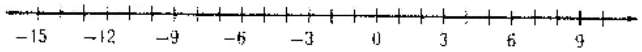
6. {−15, −12, −9, −2}



7. {8, 3, −7, −5}



8. {−14, −7, 10, −1}



Evaluate each expression.

9. $|31| + |-5|$
10. $|-16| - |4|$
11. $|-28| - |-1|$
12. $|11-2|$
13. $|44| + |-34|$
14. $|-101| - |-1|$

15. **BUSINESS** Ms. Solorio's small business had a profit of $460 on Monday. Write an integer to represent this profit.

16. **CAVING** The end of a cave is 380 meters below the surface of the earth. Write an integer to represent this depth.

17. **TEMPERATURES** The low temperatures for three consecutive days were −5°F, 3°F, and 4°F. Which temperature has the greatest absolute value?

18. **ELEVATIONS** The lowest elevation in New Orleans, Louisiana, is −8 feet. The lowest elevation in Long Beach, California, is −7 feet. Which city has the lower elevation?

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