Warm Up

1. Copy homework into your planner

2. Update table of contents

3. Open your notebook so that your completed homework is visible

4. Copy and answer the following warm up problems on the back of page 2.

Identify the square root values.

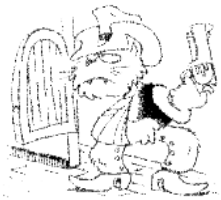
$\sqrt{121}$ 11 $\sqrt{256}$ 16

Circle all of the perfect square numbers.

2 36 54 144 196 225

6·6 12·12 14·14 15·15

As the Cat Dressed Up as a Cowboy Walked into a Saloon with His Arm in a Sling, What Did He Say?



Find each answer in the appropriate set of boxes at the bottom of the page.
Write the letter of the exercise in the box containing the answer.

I. Find the length of one side (s) of each square.

(I) Area $25\ m^2$ — $s =$ 5 m

(O) Area $64\ cm^2$ — $s =$ 8 cm

(M) Area $400\ ft^2$ — $s =$ 20 ft

II. Find the square root.

(T) $\sqrt{49}$ 7 (O) $\sqrt{16}$ 4 (E) $\sqrt{100}$ 10 (N) $\sqrt{81}$ 9

(R) $\sqrt{36}$ 6 (O) $\sqrt{4}$ 2 (I) $\sqrt{144}$ 12 (G) $\sqrt{1}$ 1

(H) $\sqrt{900}$ 30 (L) $\sqrt{2,500}$ 50 (F) $\sqrt{6,400}$ 80 (K) $\sqrt{10,000}$ 100

III. Simplify.

(O) 15^2 225 (W) 11^2 121 (T) 25^2 625

(A) $\sqrt{225}$ 15 (O) $\sqrt{121}$ 11 (W) $\sqrt{625}$ 25

(N) $\sqrt{16} + \sqrt{9}$ 7 (A) $\sqrt{36} + \sqrt{64}$ 14 (M) $\sqrt{25} - \sqrt{9}$ 2

(S) $\sqrt{16 + 9}$ 5 (M) $\sqrt{36 + 64}$ 10 (H) $\sqrt{25 - 9}$ 4

(Y) $\sqrt{0.25}$ 0.5 (H) $\sqrt{0.81}$ 0.9 (P) $\sqrt{0.01}$ 0.1

Answers for Part I and Part II

12	20	11	50	4	2	100	5	9	1	60	80	8	6	3	7	30	10	90
I	M		L	O	O	K	I	N	G		F	O	R		T	H	E	

Answers for Part III

2	14	7	18	121	0.8	225	12	5	4	11	625	0.4	10	0.5	715	21	15	25
M	A	N		W	H	O		S	H	O	T		M	Y		P	A	W

Estimating

NON-PERFECT SQUARE ROOTS

Directions: Identify the two consecutive integers in which each square root lies between.

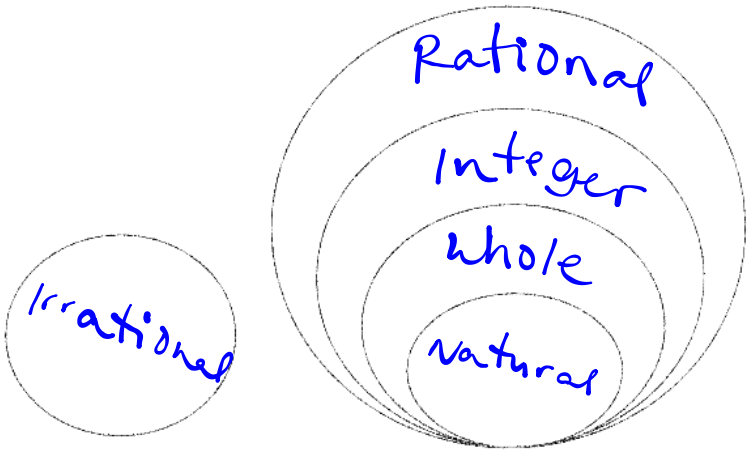
10. $\sqrt{10}$ 3 4 $3 \cdot 3 = 9$ $4 \cdot 4 = 16$	**11.** $\sqrt{115}$ 10 11 $10 \cdot 10 = 100$ $11 \cdot 11 = 121$	**12.** $\sqrt{59}$
13. $-\sqrt{41}$	**14.** $-\sqrt{3}$	**15.** $-\sqrt{206}$

Directions: ~~Approximate each square root to the nearest tenth.~~

16. $\sqrt{84}$	**17.** $-\sqrt{27}$	**18.** $\sqrt{145}$

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
The Real Numbers	The set of Rational and irrational numbers.
Irrational Numbers	• Decimals that do not end and have no repeat. pattern. • Examples: $\pi \rightarrow 3.141529\ldots$, $\sqrt{10}$
Rational Numbers	• ALL FRACTIONS, or numbers that can be written as a fraction (0.5) where a and b are integers. • Decimals that terminate or have a pattern • Examples: $\frac{1}{3}$, 0.3333..., 0.4545...
	Classifying the Rational Numbers Further:
...-2,-1,0,1,2...	Integers: Whole numbers and their opposites
0,1,2,3...	Whole Numbers: greater than or = to zero
1,2,3...	Natural Numbers: greater than or = to one
Organizing the Real Numbers	The relationships between sets are frequently shown through a diagram.

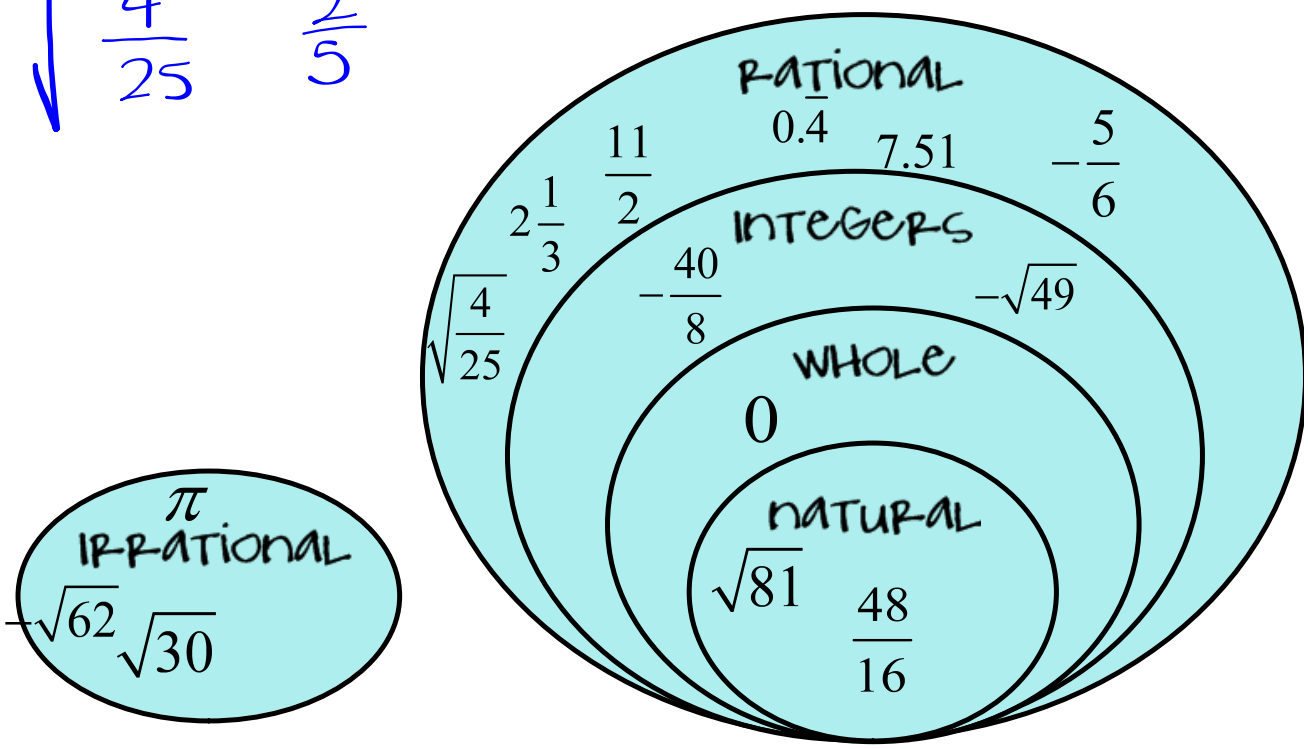


4.52956

$4\ \dfrac{52956}{100,000}$

Directions: Drag each number to it's location in the diagram below.

$\sqrt{\frac{4}{25}}$ $\frac{2}{5}$



Examples

$|-9|$ absolute value

Directions: Name all sets to which each number belongs.

1. -47
Integer
Rational

2. $2\frac{3}{8}$
Rational

3. $|-9| = 9$
Natural Whole Integer Rational

4. $\sqrt{23}$
Irrational

5. 1.5625
Rational

6. 0
Whole Integer Rational

7. $-\sqrt{64}$ (-8)
Integer
Rational

8. $-0.1\overline{23}...$
Rational

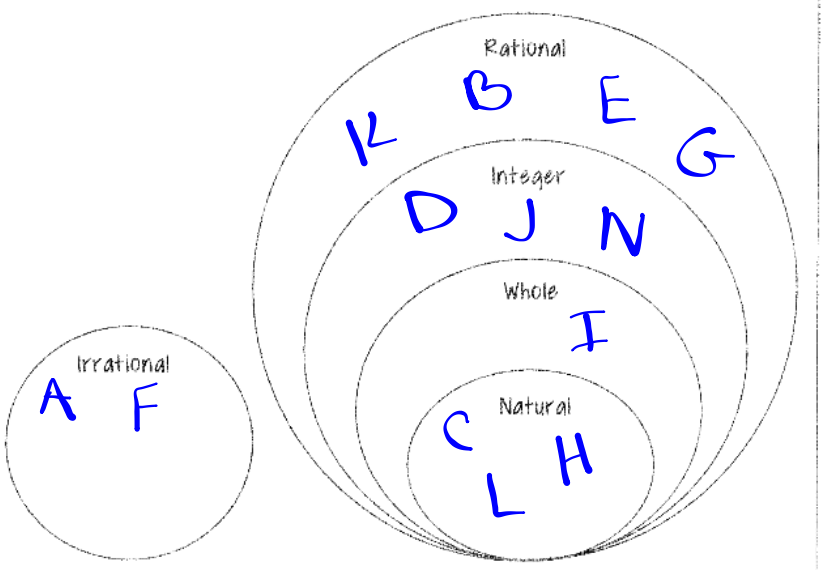
9. $-\frac{24}{6} = -4$
Integer
Rational

10. $\sqrt[3]{8}$ $2 \cdot 2 \cdot 2 = 8$ (2)
Nat. Whole Int. Rat.

Directions: Place the **LETTER** of the values to the left in the smallest set that contains the value.

Values

A. $-\sqrt{50}$	B. 3.895
C. 8	D. -11
E. $-4\frac{1}{5}$	F. π
G. $1.\overline{7}$	H. $\sqrt{196}$
I. $\sqrt{0}$	J. $-\lvert -34 \rvert$
K. 3^{-1}	L. $\frac{27}{9}$ 3
~~M. $7 \cdot 10^{-2}$~~	N. $-\sqrt{4}$



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

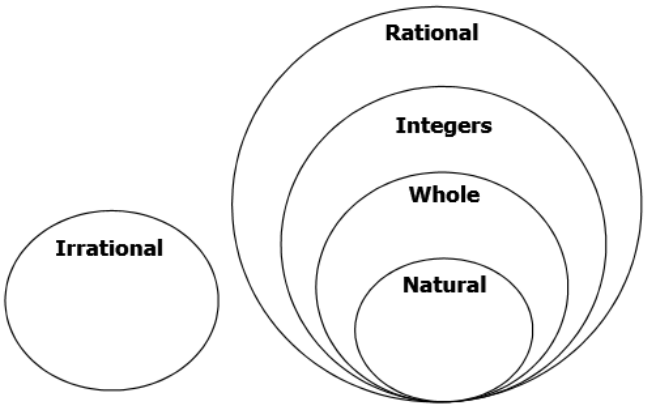
Date: _____ **Per:** _____ **Homework 10:** The Real Number System

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

1. $-\sqrt{49}$	**2.** -5.3125
3. π	**4.** $\lvert -24 \rvert$
5. $9-3^2$	**6.** 4^{-2}

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. $-\lvert -13 \rvert$	**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 _____ integers.

10. Irrational numbers are _____ rational numbers

11. Rational numbers are _____ real numbers.

12. Square roots are _____ rational numbers.

Directions: Name all sets to which the following number belongs.

$\sqrt{64}$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

$-9.\overline{2}$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

$$-\frac{42}{7}$$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

0

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

$\sqrt{24}$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

1.875

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

$$\sqrt{\frac{25}{49}}$$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

$$-\sqrt{10}$$

- Real Numbers
- Irrational Numbers
- Rational Numbers
- Integers
- Whole Numbers
- Natural Numbers

Directions: Name all sets to which the following number belongs.

$$\frac{6}{3}$$

Real Numbers

Irrational Numbers

Rational Numbers

Integers

Whole Numbers

Natural Numbers

Directions: Name all sets to which the following number belongs.

$$-\sqrt{144}$$

Real Numbers

Irrational Numbers

Rational Numbers

Integers

Whole Numbers

Natural Numbers