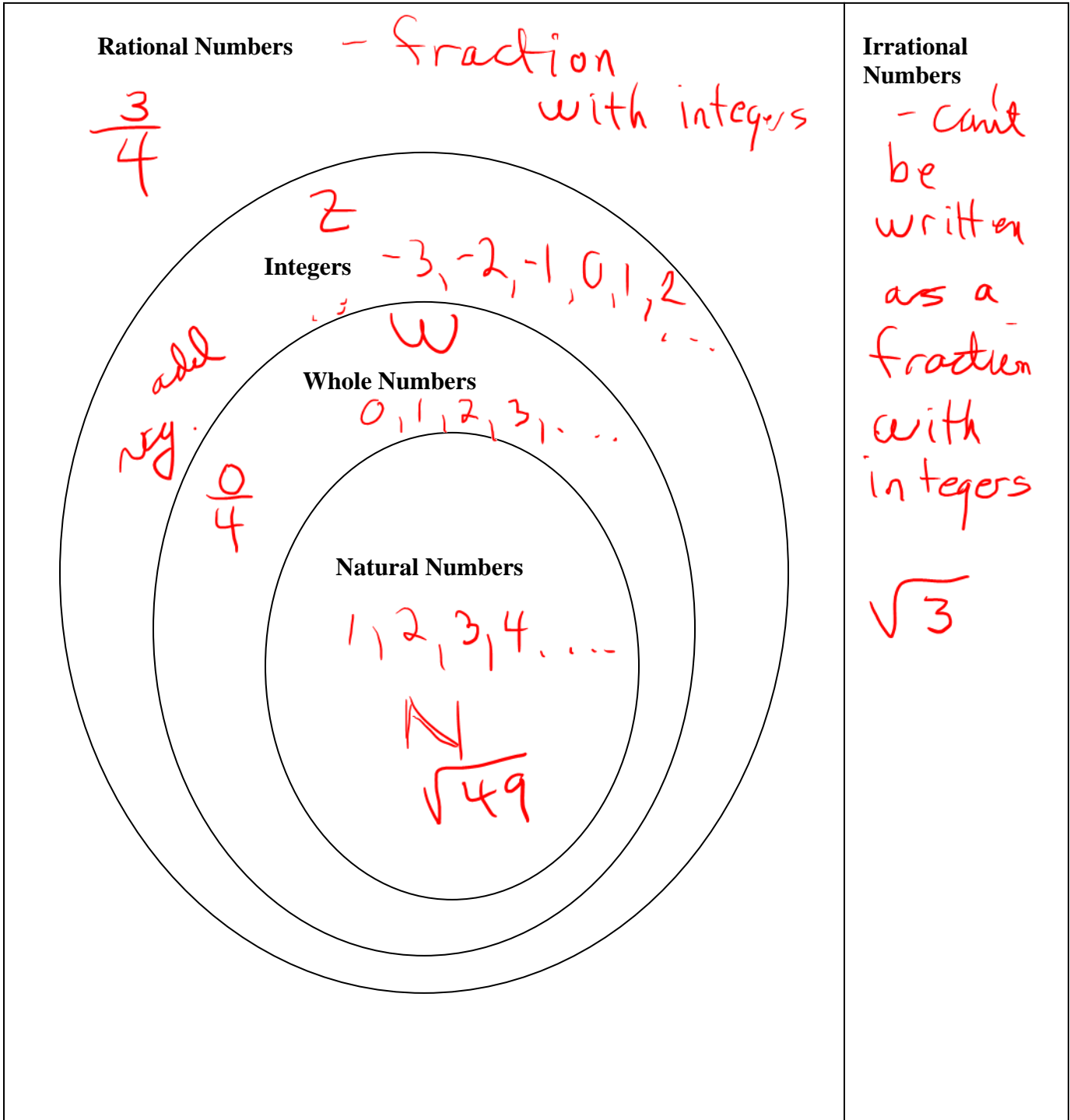
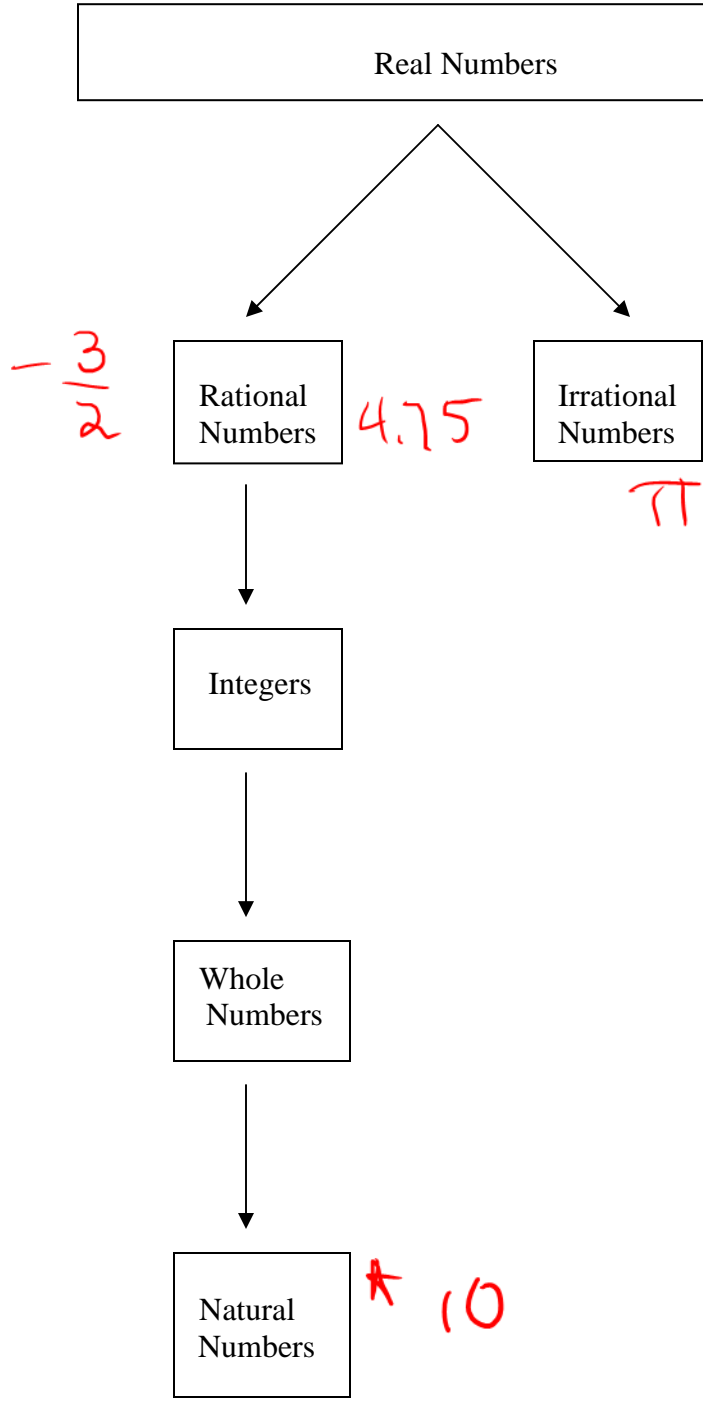


The Relationships between the Subsets of Real Numbers

The Set of Real Numbers



Or the flow-chart version –



$10 \in \mathbb{N}$
 $10 \in \mathbb{W}$
 $10 \in \mathbb{Z}$
 $10 \in \mathbb{Q}$

$\sqrt{100} = 10$
 $-\frac{3}{2}$ rational
 4.75 rational terminating decimal
 π

Which sets are subsets of each other?

State whether each statement is true or false –

$\mathbb{N} \subseteq \mathbb{Z}$

YES

every natural # is integer

$\mathbb{Q} \subset \mathbb{R}$

YES

rational

proper subset of reals

$\mathbb{Q} \subseteq \mathbb{Z}$

NO

1/2 is NOT integer

NO

$\mathbb{W} \subset \mathbb{N}$

$0 \notin \mathbb{N}$

integer

$\mathbb{Q} \cup \mathbb{I} = \mathbb{R}$

TRUE

$\mathbb{Q} \cap \mathbb{I} = \{0\}$

0 is NOT rational
0 is rational

irrational
 $0 \notin \mathbb{Q} \cap \mathbb{I}$

To which sets does each number belong

Natural, Whole, Integer, Rational, Irrational, or Real Numbers

3

$\mathbb{N}, \mathbb{W}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

-5

$\mathbb{Z}, \mathbb{Q}, \mathbb{R}$

$-\frac{3}{5}$

\mathbb{Q}, \mathbb{R}

$\frac{4}{0}$ undefined
not real

0

$\mathbb{W}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

$\sqrt{7}$

\mathbb{I}, \mathbb{R}

$\sqrt{100}$

$\mathbb{N}, \mathbb{W}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

$\frac{0}{-4}$

= 0 $\mathbb{W}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

7.34

\mathbb{Q}, \mathbb{R}

5.34334333433334333334...

= \mathbb{I}, \mathbb{R}

4.325325325325.....

\mathbb{Q}, \mathbb{R}