

REAL NUMBER (R) SYSTEM

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graph TD; R[REAL NUMBER (R) SYSTEM] --> Q[RATIONAL NUMBERS (Q)]; R --> Qbar[IRRATIONAL NUMBERS (Q̄)]; Q --> Z[INTEGERS (Z)]; Z --> W[WHOLE NUMBERS (W)]; W --> N["NATURAL NUMBERS (N)  
(COUNTING NUMBERS)"]; style Qbar fill:none,stroke:none;
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RATIONAL NUMBERS (Q)

- * Can be expressed as the ratio of two integers $\frac{a}{b}$ where $b \neq 0$
- * Decimal numbers that terminate
- * Decimals that repeat
- * Integers, whole numbers & natural numbers.
- * Examples: $\frac{1}{3}$, $\frac{4}{1}$, -1.24, 8, $0.\overline{27}$, 0

IRRATIONAL NUMBERS (\bar{Q})

- * Cannot be expressed as the ratio of two integers $\frac{a}{b}$ where $b \neq 0$
- * Decimal numbers that do not terminate and have no repeating pattern of digits
- * Examples: π , $\sqrt{2}$, $\sqrt{5}$, 2.12112111211112...

INTEGERS (Z)

- * Whole numbers and their opposites
- * Examples: ... -3, -2, -1, 0, 1, 2, 3...

WHOLE NUMBERS (W)

- * Natural numbers and 0
- * Examples: 0, 1, 2, 3...

NATURAL NUMBERS (N) (COUNTING NUMBERS)

- * Positive Integers
- * Examples: 1, 2, 3...