

Real Number Chart

LSC-O Learning Center

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\mathbb{R}
Real Numbers
Includes all Rational and Irrational Numbers
 $-\frac{3}{5}, -1, 0, 1, \sqrt{2}, \pi, 6.35, 273$

Q stands for "quotient."

\mathbb{Q}
Rational Numbers
Can be expressed as a ratio of two Integers: a/b , ($b \neq 0$); such ratios (fractions) can be expressed as terminating or repeating decimals
 $-6, -\frac{1}{3} (-0.333 \dots), 0, \frac{3}{4} (0.75), 25$
** Some roots are rational: $\sqrt{100} = 10, \sqrt[3]{8} = 2$*

Irrational Numbers
All Real Numbers that are NOT Rational Numbers; cannot be expressed as fractions, only non-repeating, non-terminating decimals
 $-\sqrt{2}, -\sqrt[3]{5}, \sqrt{21}, \sqrt[3]{81}, \sqrt{101}, \pi, e, \varphi$
**Even roots (such as square roots) that don't simplify to whole numbers are irrational.
*Odd roots (such as cube roots) that don't simplify to whole numbers are irrational.
* Pi (π), Euler's number (e), and the Golden Ratio (φ) are irrational.*

Non-Integer Rational Numbers
Fractions, terminating and repeating decimals
 $-\frac{1}{2} (-0.5), \frac{9}{11} (0.8181 \dots), \frac{13}{10} (1.3)$

\mathbb{Z}
Integers
Positive and Negative Non-fractional Rational Numbers, including Zero
 $\dots -3, -2, -1, 0, 1, 2, 3, \dots$

Z stands for "zahlen," German for "numbers."

Negative Numbers
Negative Integers
 $\dots -476, \dots, -3, -2, -1$

\mathbb{W}
Whole Numbers
Positive Integers, including Zero
 $0, 1, 2, 3, \dots, 476, \dots$

Zero
0

\mathbb{N}
Natural Numbers
Counting Numbers
 $1, 2, 3, \dots, 476, \dots$



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