Unfortunately, in the last year, adblock has now begun disabling almost all images from loading on our site, which has lead to mathwarehouse becoming unusable for adlbock users.

A rational number is a number that can be written in the form of a common fraction of two integers. In other words, it is a number that can be represented as one integer divided by another integer. The following are some examples.

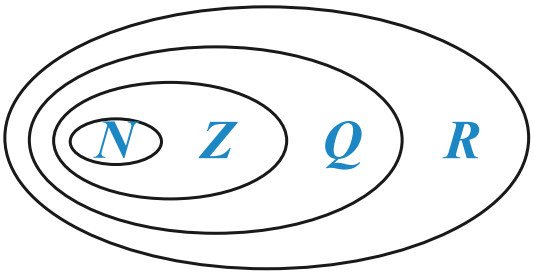
2. The square root of 2 is not a rational number because its decimal never ends so we have no way to express it in the form of a common fraction: $\sqrt{2}$

There are many different sets of numbers that are commonly used throughout mathematics. Many of them overlap, and it can be helpful to know the various differences between number sets and how they relate to each other.

The set of rational numbers is typically denoted as Q. It is a subset of the set of real numbers (R), which is made up of the sets of rational and irrational numbers.

The set of rational numbers also includes two other commonly used subsets: the sets of integers (Z) and natural numbers (N). Rational numbers include all of the integers as well as all the values between each integer, while integers include all of the natural numbers in addition to their negative values.

The following image depicts the relationships described above (excluding irrational numbers):



Select the operator and enter the required values to identify a number using a rational or irrational calculator.

The rational number calculator is an online tool that identifies the given number is rational or irrational. It takes a numerator and denominator to check a fraction, index value and a number in case of a root value.

Rational or irrational checker tells us if a number is rational or irrational and shows the simplified value of the given fraction.

Rational number is a number that can be expressed as the ratio of two integers. Generally, it's written in the form of p/q where the condition must be $q \neq 0$.

For example,

4/5, 2/3

All the integers, whole numbers, even and odd numbers are rational numbers. This is because the integer numbers are considered of having the denominator of 1.

3 = 3/1

An irrational number is a number that cannot express the ratio between two numbers. We can say that the numbers that are not divisible to the simplest form are considered an irrational number.

For example,

$\sqrt{7}$, 54.72410, π

The following conditions should be followed to identify a rational or irrational number.

Conditions for rational number

Conditions for Irrational number

It is written in the form of "p/q" and the q is not equal to 0 ($q \neq 0$).

The square roots that are not perfectly square to any of the integers e.g. $\sqrt{8}$, $\sqrt{20}$.

The p/q value can be further shortened through division and it can be converted into the decimal form

The decimals that don't stop or repeating are irrational number.

The set of rational numbers can include positive, negative integers and a zero where it can be written in the fraction.

"π", which is also known as the "pie."

If you don't want to dive into these conditions to check a number, use our rational and irrational numbers calculator above.

The square root of a number can be a rational or irrational number depending on the condition and the number.

If the square root is a perfect square, then it would be a rational number. On the other side, if the square root of the number is not perfect, it will be an irrational number. i.e., $\sqrt{10} = 3.16227766017$.

Examples:

Is 0 a rational number Yes is 3/5 a rational or irrational number Rational is 6.7234724 irrational Yes is 3.587 a rational or irrational number Rational is 2.72135 rational or irrational Rational 3.587 rational or irrational Rational is 0.684 a rational number Yes is 3.587 a rational number Yes is 0.1875 a rational number Yes Is 74.721 a rational number? Yes Is 1.345 a rational number? Yes is 6.5 rational or irrational Rational is 21.989 an irrational number Yes Is 3.444 a rational number? Yes Is 2.3333 a rational number? Yes Is 5 a rational number Yes Is 2 a rational number Yes is 1/2 a rational number Yes is 5/2 rational or irrational Rational Is 4.567 a rational number? Yes

1. Roberts, D. Rational, and Irrational Numbers - MathBitsNotebook(A1 - CCSS Math).
2. Classifying numbers: Rational & Irrational | Algebra (video) | Khan Academy.

The number 46, as with any integer, is a rational number.

Study guides

3.81

☆★☆★☆★☆★☆★

1835 Reviews

Earn +

20

pts

Q: Is 46 a rational number

Write your answer...

Still have questions?

Continue Learning about Other Math

Answers

Made with □ in St. Louis

The term rational number is derived from ratio; it means any number which can be expressed as the ratio of two integers, such as 1/2, 546/17, etc. Any such number that is greater than zero qualifies as a positive number, which is therefore not negative.