How can I use IMLN function in Google Sheets?

Authored by

stats writer

June 30, 2024

The IMLN function in Google Sheets is a powerful tool that allows users to calculate the natural logarithm of a given number. This function can be used by entering the number as the argument within the function, and the result will be the natural logarithm of that number. This can be helpful for various mathematical and statistical calculations, such as finding growth rates or probability distributions. To use the IMLN function effectively, users should have a basic understanding of logarithms and their applications. With its ease of use and versatility, the IMLN function is a valuable tool for data analysis and problem-solving in Google Sheets.

IMLN function

The `IMLN` function returns the logarithm of a complex number, base e (Euler's number).

Parts of a IMLN formula

The `IMLN` formula is formatted as `=IIMLN(number).`

Part	Description	Notes
number	The input value of the logarithm function.	The number can be written as plain numbers, e.g. 1, to be interpreted as a real number.The number can be written as quoted text in order to specify both the real and complex coefficients.

Sample formulas

`IMLN("3+4i")`

`IMLN(A2)`

`IMLN("4+2j")`

Notes

`IMLN` is equivalent to `LN` for all non-complex values that are greater than zero.`IMLN` is equivalent to `LOG` given base of `e`, or `EXP(1)`, for all non-complex values that are greater than zero.The natural logarithm of a complex number is defined as follows:
ln(x+yi) = √(x2+y2) + i tan-1(y/x)

Examples

	A	B
1	**Formula**	**Result**

	A	B
2	`=IMLN("1+i")`	0.346573590279973+0.785398163397448i
3	`=IMLN("4+2j")`	1.497866136777+0.463647609000806i
4	`=IMLN("-4.6")`	1.52605630349505+3.14159265358979i

Related functions

`LN`: Returns the logarithm of a number, base e (Euler's number).

`COMPLEX`: The COMPLEX function creates a complex number, given real and imaginary coefficients.

`IMAGINARY`: Returns the imaginary coefficient of a complex number.

`IMREAL`: Returns the real coefficient of a complex number.

`LOG10`: Returns the logarithm of a number, base 10.

`LOG`: Returns the logarithm of a number given a base.

`EXP`: Returns Euler's number, e (~2.718) raised to a power.