

# How can I use the LOG function in Excel to calculate the logarithm of a number?

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## RECOMMENDED CITATION

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The LOG function in Excel is a mathematical function that allows users to calculate the logarithm of a given number. This function takes in two arguments - the number and the base - and returns the logarithm of the number with the specified base. It can be used in various applications, such as financial analysis, data analysis, and scientific calculations. To use the LOG function, simply enter the number and base in the designated cells and apply the function. The result will be displayed in the cell where the function is applied. This function is useful for simplifying complex calculations and obtaining accurate results in a quick and efficient manner.

This article describes the formula syntax and usage of the **LOG** function in Microsoft Excel.

## Description

Returns the logarithm of a number to the base you specify.

## Syntax

LOG(number, )

The LOG function syntax has the following arguments:

**Number** Required. The positive real number for which you want the logarithm.

**Base** Optional. The base of the logarithm. If base is omitted, it is assumed to be 10.

## Example

Copy the example data in the following table, and paste it in cell A1 of a new Excel worksheet. For formulas to show results, select them, press F2, and then press Enter. If you need to, you can adjust the column widths to see all the data.

Formula	Description	Result
=LOG(10)	Logarithm of 10. Because the second argument (base) is omitted, it is assumed to be 10. The result, 1, is the power to which the base must be raised to equal 10.	1
=LOG(8, 2)	Logarithm of 8 with base 2. The result, 3, is the power to which the base must be raised to equal 8.	3
=LOG(86, 2.7182818)	Logarithm of 86 with base e (approximately 2.718). The result, 4.454, is the power to which the base must be raised to equal 86.	4.4543473