How can I use the COTH function in Excel to calculate the hyperbolic cotangent of a given number?

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The COTH function in Excel is a mathematical function that calculates the hyperbolic cotangent of a given number. It can be used to determine the inverse of the hyperbolic tangent of a number. This function is useful in various mathematical and statistical calculations, such as in financial analysis and engineering. To use the COTH function in Excel, simply input the number for which you want to calculate the hyperbolic cotangent into the formula bar, preceded by the word "COTH." This will return the calculated value of the hyperbolic cotangent for that number. The COTH function in Excel is a useful tool for accurately and efficiently performing hyperbolic cotangent calculations within your spreadsheet.

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

Description

Return the hyperbolic cotangent of a hyperbolic angle.

Syntax

COTH(number)

The COTH function syntax has the following arguments.

Number Required.

Remarks

The hyperbolic cotangent is an analog of the ordinary (circular) cotangent.

The absolute value of Number must be less than 2^27.

If Number is outside its constraints, COTH returns the #NUM! error value.

If Number is a non-numeric value, COTH returns the #VALUE! error value.

The following equation is used:

$$\coth(N) = \frac{1}{\tanh(N)} = \frac{\cosh(N)}{\sinh(N)} = \frac{e^{N} + e^{-N}}{e^{N} - e^{-N}}$$