How can I use the IMSQRT function in Excel to find the square root of a complex number?

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The IMSQRT function in Excel is a tool that allows users to find the square root of a complex number. This function takes the form of IMSQRT(inumber), where "inumber" represents the complex number. The output of the function is a complex number that is the square root of the input. This function can be useful for mathematical and scientific calculations that involve complex numbers. To use the IMSQRT function, simply enter the complex number into the function and press enter. The result will be displayed in the cell. This function can help simplify complex calculations and improve accuracy in Excel spreadsheets.

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

Description

Returns the square root of a complex number in x + yi or x + yj text format.

Syntax

IMSQRT(inumber)

The IMSQRT function syntax has the following arguments:

Inumber Required. A complex number for which you want the square root.

Remarks

Use COMPLEX to convert real and imaginary coefficients into a complex number.

The square root of a complex number is:

$$\sqrt{x+yi} = \sqrt{r}\cos\left(\frac{\theta}{2}\right) + i\sqrt{r}\sin\left(\frac{\theta}{2}\right)$$

where:

$$r = \sqrt{x^2 + y^2}$$

and:

$$\theta = \tan^{-1}\left(\frac{y}{x}\right)$$

and:

$$\theta \in (-\pi; \pi]$$