“How do I use the MDETERM function in Excel?”

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The MDETERM function in Excel is a mathematical formula that calculates the determinant of a given matrix. To use this function, first select the cell where you want the result to appear. Then, type "=MDETERM(" in the formula bar and select the range of cells that make up the matrix. Close the parentheses and press Enter to calculate the determinant. This function can be useful in various mathematical and statistical applications, such as solving systems of equations and determining the invertibility of a matrix. It is important to note that the matrix must be square (equal number of rows and columns) for the MDETERM function to work correctly.

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

Description

Returns the matrix determinant of an array.

Syntax

MDETERM(array)

The MDETERM function syntax has the following arguments:

Array Required. A numeric array with an equal number of rows and columns.

Remarks

Array can be given as a cell range, for example, A1:C3; as an array constant, such as {1,2,3;4,5,6;7,8,9}; or as a name to either of these.

MDETERM returns the #VALUE! error when:

Any cells in array are empty or contain text.

Array does not have an equal number of rows and columns.

The matrix determinant is a number derived from the values in array. For a three-row, three-column array, A1:C3, the determinant is defined as:

MDETERM(A1:C3)
equals A1*(B2*C3-B3*C2) + A2*(B3*C1-B1*C3) + A3*(B1*C2-B2*C1)

Matrix determinants are generally used for solving systems of mathematical equations that involve several variables.

MDETERM is calculated with an accuracy of approximately 16 digits, which may lead to a small numeric error when the calculation is not complete. For example, the determinant of a singular matrix may differ from zero by 1E-16.