

How can I use the MUNIT function in Excel?

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MUNIT, or the Matrix Unit function, is a useful tool in Microsoft Excel that allows users to easily create square matrices of any desired size. This function can be used to perform various mathematical operations on matrices, such as addition, subtraction, multiplication, and inversion. To use the MUNIT function, simply enter the desired size of the matrix as the input, and the function will automatically generate the corresponding matrix. This function is particularly helpful for users who need to perform complex mathematical calculations involving matrices, as it eliminates the need for manual creation of matrices. Overall, the MUNIT function is a convenient and efficient tool for working with matrices in Excel.

The **MUNIT** function returns the unit matrix for the specified dimension.

Syntax

MUNIT(dimension)

The MUNIT function syntax has the following arguments.

dimension Required. Dimension is an integer specifying the dimension of the unit matrix that you want to return. It returns an array. The dimension has to be greater than zero.

MUNIT uses the following equation:

$$1_{N \times N} = \begin{matrix} 1 & 0 & \dots & 0 \\ 0 & 1 & \dots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & 1 \end{matrix}$$

Remarks

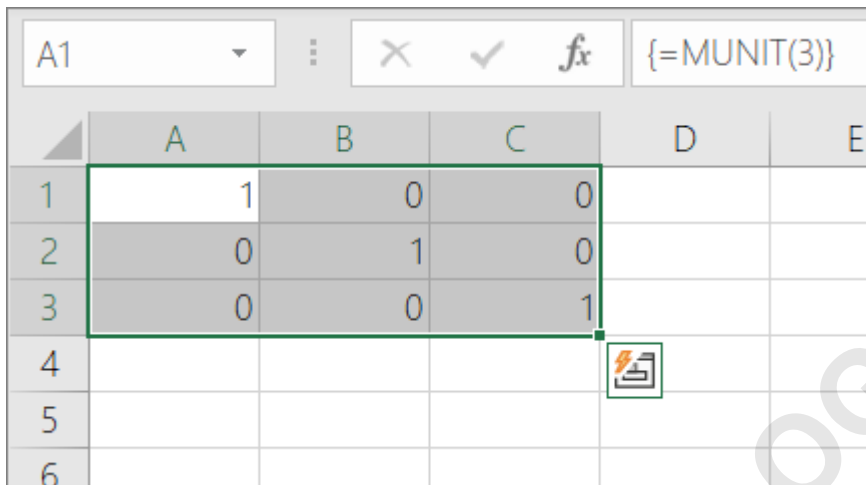
If dimension is a value that's equal to or smaller than zero (0), MUNIT returns the #VALUE! error value.

Examples

The following example shows the results of the MUNIT function in a 3X3 matrix below, in cells A1:C3.

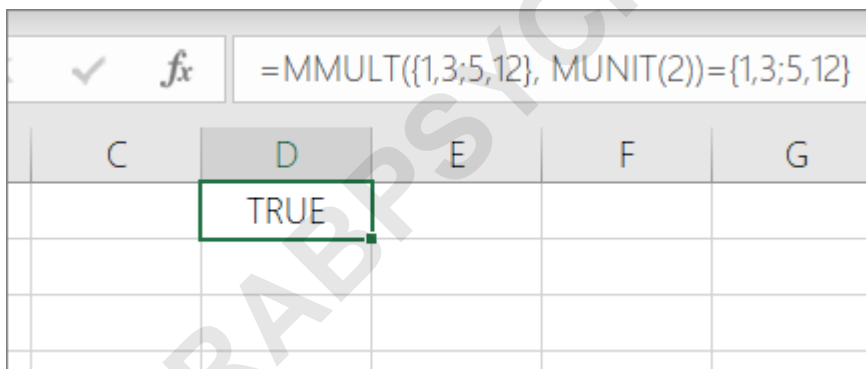
Note: If you have a current version of [Microsoft 365](#), then you can simply enter the formula in the top left-cell of the output range and then press **ENTER** to confirm the formula as a dynamic array

formula. Otherwise, the formula must be entered as a legacy array formula by first selecting the output range (A1:C3 in this case), entering the formula in the top-left-cell of the output range, and then pressing **CTRL+SHIFT+ENTER** to confirm it. Excel inserts curly brackets at the beginning and end of the formula for you. For more information on array formulas, see [Guidelines and examples of array formulas](#).



	A	B	C	D	E
1	1	0	0		
2	0	1	0		
3	0	0	1		
4					
5					
6					

MUNIT can be used in line with other matrix functions, such as MMULT.



	C	D	E	F	G
1		TRUE			
2					
3					
4					