How do I use the MINVERSE function in excel?

Authored by

stats writer

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The MINVERSE function in Excel is a mathematical function that allows users to find the inverse of a given matrix. This function is particularly useful in mathematical and statistical analysis, as it helps in solving complex equations and finding the solutions of linear systems. To use the MINVERSE function, users must first select the cell where they want the resulting inverse matrix to appear. Then, they can enter the formula "=MINVERSE(array)", where "array" refers to the range of cells containing the original matrix. The function will then calculate the inverse and display it in the selected cell. It is important to note that the original matrix must be a square matrix, and the resulting inverse matrix will also be a square matrix with the same dimensions. Overall, the MINVERSE function is a powerful tool that can greatly aid in data analysis and problem-solving in Excel.

The MINVERSE function returns the inverse matrix for a matrix stored in an array.

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, 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, 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.

Syntax

MINVERSE(array)

The MINVERSE 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, such as A1:C3; as an array constant, such as {1,2,3;4,5,6;7,8,9}; or as a name for either of these.

If any cells in array are empty or contain text, MINVERSE returns a #VALUE! error.

MINVERSE also returns a #VALUE! error if array does not have an equal number of rows and columns.

Inverse matrices, like determinants, are generally used for solving systems of mathematical equations involving several variables. The product of a matrix and its inverse is the identity matrix -

- the square array in which the diagonal values equal 1, and all other values equal 0.

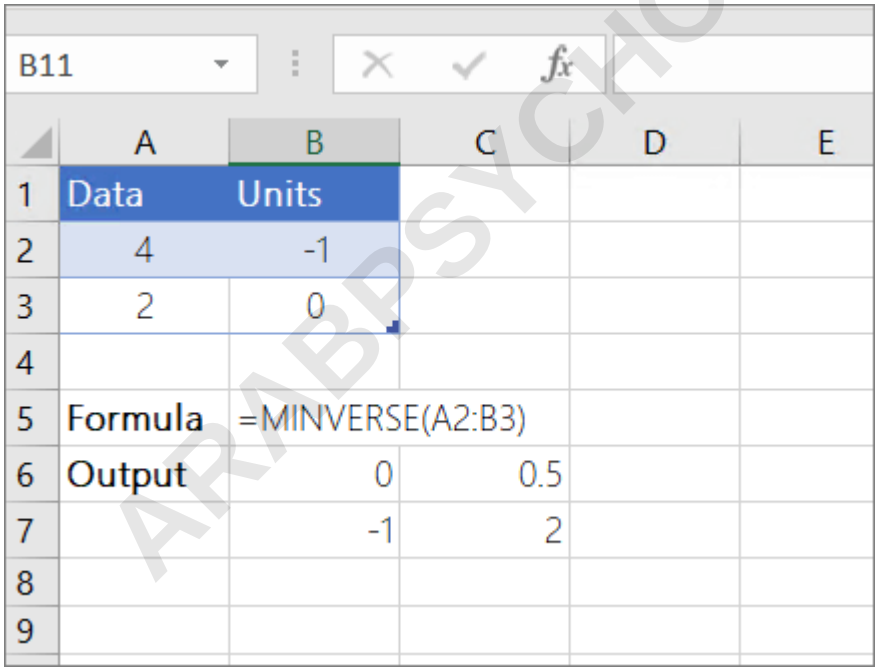
As an example of how a two-row, two-column matrix is calculated, suppose that the range A1:B2 contains the letters a, b, c, and d that represent any four numbers. The following table shows the inverse of the matrix A1:B2.

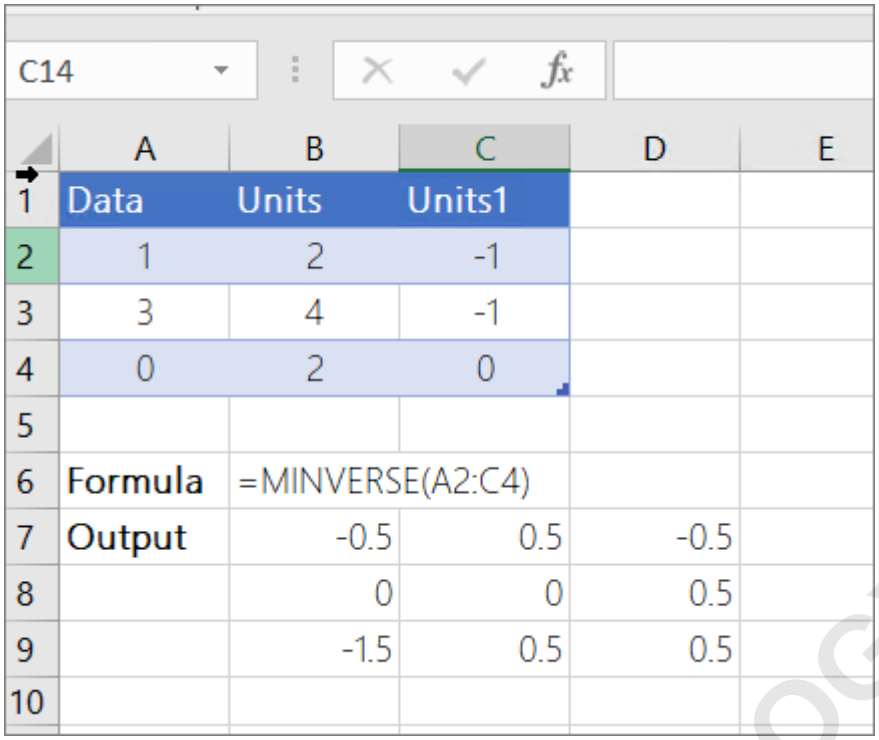
Column A	Column B	
Row 1	d/(a*d-b*c)	b/(b*c-a*d)
Row 2	c/(b*c-a*d)	a/(a*d-b*c)

MINVERSE is calculated with an accuracy of approximately 16 digits, which may lead to a small numeric error when the cancellation is not complete.

Some square matrices cannot be inverted and will return the #NUM! error value with MINVERSE. The determinant for a noninvertable matrix is 0.

Examples





	A	B	C	D	E
1	Data	Units	Units1		
2	1	2	-1		
3	3	4	-1		
4	0	2	0		
5					
6	Formula	=MINVERSE(A2:C4)			
7	Output	-0.5	0.5	-0.5	
8		0	0	0.5	
9		-1.5	0.5	0.5	
10					

You must enter the above formulas as array formulas for it to work correctly. After you enter the formula, press **Enter** if you have a current Microsoft 365 subscription; otherwise press **Ctrl+Shift+Enter**. If the formula is not entered as an array formula, a single result is returned.