

# How do I use the SERIESSUM function in Excel to calculate the sum of a power series?

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The SERIESSUM function in Excel is a mathematical formula that allows users to calculate the sum of a power series. This function takes in four arguments: the initial term, the step size, the number of terms, and the power. By inputting these values, the function will calculate the sum of the power series up to the specified number of terms. This can be useful for solving mathematical problems involving series, such as finding the total cost of compound interest or calculating the value of an annuity. To use the SERIESSUM function, simply enter the function name followed by the four arguments in parentheses. This will return the sum of the power series as the result.

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

## Description

Many functions can be approximated by a power series expansion.

Returns the sum of a power series based on the formula:

$$\text{SERIES}(x, n, m, a) = a_1x^n + a_2x^{(n+m)} + a_3x^{(n+2m)} \\ + \dots + a_jx^{(n+(j-1)m)}$$

## Syntax

SERIESSUM(x, n, m, coefficients)

The SERIESSUM function syntax has the following arguments:

**X** Required. The input value to the power series.

**N** Required. The initial power to which you want to raise x.

**M** Required. The step by which to increase n for each term in the series.

**Coefficients** Required. A set of coefficients by which each successive power of x is multiplied. The number of values in coefficients determines the number of terms in the power series. For example, if there are three values in coefficients, then there will be three terms in the power series.

## Remark

If any argument is nonnumeric, SERIESSUM returns the #VALUE! error value.