How do I use the NEGBINOM.DIST function in Excel?

Authored by

stats writer

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The NEGBINOM.DIST function in Excel is used to calculate the probability of a certain number of failures occurring before a specified number of successes in a series of independent trials. To use this function, the user must input the required arguments, including the number of failures, number of successes, and probability of success in each trial. The function will then return the probability of the specified number of failures occurring before the specified number of successes. This can be useful in analyzing data related to discrete random variables, such as in statistical analysis or forecasting.

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

Description

Returns the negative binomial distribution, the probability that there will be Number_f failures before the Number_s-th success, with Probability_s probability of a success.

This function is similar to the binomial distribution, except that the number of successes is fixed, and the number of trials is variable. Like the binomial, trials are assumed to be independent.

For example, you need to find 10 people with excellent reflexes, and you know the probability that a candidate has these qualifications is 0.3. NEGBINOM.DIST calculates the probability that you will interview a certain number of unqualified candidates before finding all 10 qualified candidates.

Syntax

NEGBINOM.DIST(number_f,number_s,probability_s,cumulative)

The NEGBINOM.DIST function syntax has the following arguments:

Number_f Required. The number of failures.

Number_s Required. The threshold number of successes.

Probability_s Required. The probability of a success.

Cumulative Required. A logical value that determines the form of the function. If cumulative is TRUE, NEGBINOM.DIST returns the cumulative distribution function; if FALSE, it returns the probability density function.

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Remarks

Number_f and number_s are truncated to integers.

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

If probability_s < 0 or if probability > 1, NEGBINOM.DIST returns the #NUM! error value.

If number_f < 0 or number_s < 1, NEGBINOM.DIST returns the #NUM! error value.

The equation for the negative binomial distribution is:

where:

x is number_f, r is number_s, and p is probability_s.

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