How can I use the COMBIN function in Excel to calculate the number of combinations for a given set of items?

Authored by

stats writer

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The COMBIN function in Excel is a powerful tool that allows users to calculate the number of combinations for a given set of items. This function takes two arguments: the number of items in the set and the size of the combination. By simply inputting these values, the COMBIN function will automatically generate the total number of possible unique combinations. This is extremely useful for tasks such as creating lottery number combinations, generating password combinations, or calculating the number of possible outcomes in a game. With its efficient and accurate calculations, the COMBIN function is a valuable feature that can save users time and effort in performing complex combination calculations.

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

Description

Returns the number of combinations for a given number of items. Use COMBIN to determine the total possible number of groups for a given number of items.

Syntax

COMBIN(number, number_chosen)

The COMBIN function syntax has the following arguments:

Number Required. The number of items.

Number_chosen Required. The number of items in each combination.

Remarks

Numeric arguments are truncated to integers.

If either argument is nonnumeric, COMBIN returns the #VALUE! error value.

If number < 0, number_chosen < 0, or number < number_chosen, COMBIN returns the #NUM! error value.

A combination is any set or subset of items, regardless of their internal order. Combinations are distinct from permutations, for which the internal order is significant.

The number of combinations is as follows, where number = n and number_chosen = k:

$$\binom{n}{k} = \frac{P_{k,n}}{k!} = \frac{n!}{k!(n-k)!}$$

where:

$$P_{k,n} = \frac{n!}{(n-k)!}$$