How do I use the CHIDIST function in Google Sheets?

Authored by

stats writer

June 30, 2024

The CHIDIST function in Google Sheets is used to calculate the cumulative probability of a chi-square distribution. To use this function, you must first enter the required arguments, which include the observed value, the degrees of freedom, and an optional parameter for the cumulative probability. Once these inputs are provided, the function will return a value between 0 and 1 representing the likelihood of obtaining a chi-square value equal to or less than the observed value. This function can be useful in statistical analysis and hypothesis testing. To access the CHIDIST function in Google Sheets, simply type "=CHIDIST()" into a cell and enter the necessary arguments within the parentheses.

CHIDIST

Calculates the right-tailed chi-squared distribution, often used in hypothesis testing.

Sample Usage

```
CHIDIST(3.45, 2)
```

```
CHIDIST(A2, B2)
```

Syntax

```
CHIDIST(x, degrees_freedom)
```

`x` - The input to the chi-squared probability distribution function. The value at which to evaluate the function.

Must be a positive number.

`degrees_freedom` - The number of degrees of freedom of the distribution.

Notes

`degrees_freedom` is truncated to an integer if a non-integer is provided.

`degrees_freedom` must be at least `1` and may not exceed `10^10`.

All arguments must be numeric.

`CHIDIST` is synonymous with `CHISQ.DIST.RT`.

See Also

`CHIINV`: Calculates the inverse of the right-tailed chi-squared distribution.

`CHISQ.DIST`: Calculates the left-tailed chi-squared distribution, often used in hypothesis testing.

`CHISQ.DIST.RT`: Calculates the right-tailed chi-squared distribution, which is commonly used in hypothesis testing.

`CHITEST`: Returns the probability associated with a Pearson's chi-squared test on the two ranges of data. Determines the likelihood that the observed categorical data is drawn from an expected distribution.

`FDIST`: Calculates the right-tailed F probability distribution (degree of diversity) for two data sets with given input x. Alternately called Fisher-Snedecor distribution or Snedecor's F distribution.

`GAMMADIST`: Calculates the gamma distribution, a two-parameter continuous probability distribution.

`TDIST`: Calculates the probability for Student's t-distribution with a given input (x).

Example

Suppose you want to test the fairness of a 6-sided die:

From several rolls, you obtain a chi-squared statistic of `12.3`.

The number of degrees of freedom is `6 - 1 = 5`.

We will evaluate the chi-squared distribution with `5` degrees of freedom when x equals `12.3`.

	A	B	C
1	**x**	**Degrees freedom**	**Solution**
2	12.3	5	0.03090046464
3	12.3	5	=CHIDIST(12.3, 5)
4	12.3	5	=CHIDIST(A2, B2)