

T.TEST function

Returns the probability that is associated with a Student's t-Test. Use **T.TEST** to determine whether two samples are likely to have come from the same two underlying populations that have the same mean.

Syntax

T.TEST(array1,array2,tails,type)

Argument	Description	Remarks
array1	The first data set.	<ul style="list-style-type: none"> None.
array2	The second data set.	<ul style="list-style-type: none"> None.
tails	Specifies the number of distribution tails.	<ul style="list-style-type: none"> If tails = 1, T.TEST uses the one-tailed distribution. If tails = 2, T.TEST uses the two-tailed distribution. If tails is any value other than 1 or 2, this function returns the #NUM! error value. If this argument is nonnumeric, this function returns the #VALUE! error value. If this argument contains a decimal value, this function ignores the numbers to the right side of the decimal point.
type	The kind of t-Test to perform.	<ul style="list-style-type: none"> If type equals 1, T.TEST performs a paired test. If type equals 2, T.TEST performs a two-sample equal variance (homoscedastic) test. If type equals 3, T.TEST performs a two-sample unequal variance (heteroscedastic) test. If this argument is nonnumeric, this function returns the #VALUE! error value. If this argument contains a decimal value, this function ignores the numbers to the

right side of the decimal point.

General remarks

- If **array1** and **array2** have a different number of data points, and **type** = 1 (paired), **T.TEST** returns the #N/A error value.
- **T.TEST** uses the data in **array1** and **array2** to compute a non-negative t-statistic. If **tails**=1, **T.TEST** returns the probability of a higher value of the t-statistic under the assumption that **array1** and **array2** are samples from populations with the same mean. The value returned by **T.TEST** when **tails**=2 is double that returned when **tails**=1 and corresponds to the probability of a higher absolute value of the t-statistic under the "same population means" assumption.

Example

To make the following example easier to understand, you can copy the data to a blank sheet and then enter the function underneath the data. Do not select the row or column headings (1, 2, 3... A, B, C...) when you copy the sample data to a blank sheet.

	A	B
1	Data1	Data2
2		6
3		19
4		3
5		2
6		14
7		4
8		5
9		17
10		1
	Formula	Description (Result)
	=T.TEST(A2:A10,B2:B10,2,1)	Probability that is associated with a Student's paired t-Test, with a two-tailed distribution (0.196016)

See also

[T.DIST.2T function](#)

[T.DIST function](#)

[T.DIST.RT function](#)

[T.INV.2T function](#)

[T.INV function](#)

[List of all functions \(by category\)](#)