

# MEAN

MEAN returns the mean or averaged value of a data set

## Syntax

1. MEAN(Pno%, Ndim%, "ColLab\$\_1",..., "ColLab\$\_Ndim%")
2. MEAN(0, Npoints%, x\_1, y\_1, x\_2, y\_2,...)
3. MEAN(@ObjFn(..), Ndim%, @ObjColPar\_1..., @ObjColPar\_Ndim%)
4. MEAN(Telitab\$, Ndim%, "ColLab\$\_1",..., "ColLab\$\_Ndim%")

### Arguments

- **Pno%** is the number that refers to the **TeLiTab** sets in the Data slot. Pno% should be an integer value or a parameter which is assigned an integer value and is the number of the **TeLiTab** set in the expressions' data slot.
- **Npoints%** is the number of points (x,y) that are given in direct definition.
- **@ObjFn()** refers to the Object from which data will be used.
- **TeLiTab\$** refers to the string parameter that contains the **TeLiTab**.
- **Ndim%** is the number of dimensions (or columns in the table...).
- **"ColLab\$\_1"** and **@ObjColPar\_1** etc refer to the columns that will be used

## Remarks

1. See also Telitab access for a generic description on the use of **TeLiTab** data
2. Similar to other Data analysis functions, the MEAN is a convenient way to evaluate data. Please also look at these functions for syntax examples
3. For a multi-dimensional dataset the MEAN will be determined over all columns. This means that all defined values will be added and divided by the total number of values in the selected columns

## Examples

### Syntax 1: **TeLiTab** in Dataslot

In this example syntax 1 is used, the **TeLiTab** is addressed in the Dataslot.

Let y be defined by

```
y = MEAN(1, 2, "XC", "YC")
```

And the data slot of the relation contains the following Telitab set:

```
|MEAN1|
0
2 "XC" "YC"
"1" 1 1
"2" 2 4
"3" 3 9
"4" 4 16
"5" 5 25
"6" 6 36
"7" 7 49
"8" 8 64
"9" 9 81
"10" 10 100|
```

This relation returns a value of **y=22.00**.

### Remarks

- If you apply the symbolic addressing of the columns for the description of the point on the curve or surface to compute the differential for, e.g. "Par\_x" and "Par\_y", please make sure that your Telitab set contains these names. If not, an error message is generated and the calculation is stopped.
- If you use |1| as data header instead of |MEAN1| it means that any special function in that expression referring to a data set Pno%=1 can access that data set.

### Syntax 2: Direct definition

In direct definition, the values are stated in the Relation itself. This method can only be used for 2D derivatives

The syntax is

MEAN( Pno%, Npoints%, x\_1, x\_2,..., x\_n)

If Pno%=0 then all x\_i values should be numerical expressions. The minimum number of values in the list is 2.

Let y be defined by

y = MEAN(0, 4, 1, 2, 4, 9)

This Equation results in y=4.

## Syntax 3 and 4: **TeLiTab** in object or string

These methods are similar to syntax 1, only data from external telitabs or objects is used.

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