

WEIGHTED MEAN

PURPOSE

Compute the weighted mean of a variable.

DESCRIPTION

The standard formula for the mean \bar{x} is:

$$\bar{x} = \frac{\sum_{i=1}^N x_i}{N} \tag{EQ 2-19}$$

while the formula for the weighted mean \bar{x}_w is:

$$\bar{x}_w = \frac{\sum_{i=1}^N w_i x_i}{\sum_{i=1}^N w_i} \tag{EQ 2-20}$$

where w_i is the weight for the i th observation. Weighted means are often used for frequency data.

SYNTAX

LET <par> = WEIGHTED MEAN <y> <weights> <SUBSET/EXCEPT/FOR qualification>

where <y> is the variable for which the weighted mean is to be computed;

<weights> is a variable containing the weights;

<par> is a parameter where the weighted mean is stored;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

LET MEAN = WEIGHTED MEAN Y1 WEIGHT

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

MEAN	=	Compute the mean of a variable.
MEDIAN	=	Compute the median of a variable.
STANDARD DEVIATION	=	Compute the standard deviation of a variable.
VARIANCE	=	Compute the variance of a variable.
WEIGHTED STAND DEVIATION	=	Compute the weighted standard deviation of a variable.
WEIGHTED VARIANCE	=	Compute the weighted variance of a variable.

APPLICATIONS

Data Analysis

IMPLEMENTATION DATE

88/10

PROGRAM

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LET Y = DATA 2 3 5 7 11 13 17 19 23
LET W = DATA 1 1 0 0 4 1 2 1 0
LET A = WEIGHTED MEAN Y W
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