WEIGHTED MEAN

PURPOSE
Compute the weighted mean of a variable.

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

$$\bar{x} = \frac{1}{N} \sum_{i=1}^{N} x_i$$

(EQ 2-19)

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

$$\bar{x}_w = \frac{1}{N} \sum_{i=1}^{N} w_i x_i$$

(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
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