MEDIAN ABSOLUTE DEVIATION

PURPOSE

Compute the median absolute deviation for a variable.

DESCRIPTION

The median absolute deviation is:

$$MAD = MEDAIN(|X_i - XMED|) \quad \textbf{(EQ Aux-240)}$$

where XMED is the median of the variable. This statistic is sometimes used as an alternative to the standard deviation.

SYNTAX

LET <par> = MEDIAN ABSOLUTE DEVIATION <y> <SUBSET/EXCEPT/FOR qualification>
where <y> is the response variable;
<par> is a parameter where the computed median absolute deviation is stored;
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

LET A = MEDIAN ABSOLUTE DEVIATION Y1
LET A = MEDIAN ABSOLUTE DEVIATION Y1 SUBSET TAG > 2

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

AVERAGE ABSOLUTE DEVIATION	=	Compute the average absolute deviation of a variable.
STANDARD DEVIATION	=	Compute the standard deviation of a variable.
VARIANCE	=	Compute the variance of a variable.
RANGE	=	Compute the range of a variable.

REFERENCE

"Data Analysis and Regression," Mosteller and Tukey, Addison-Wesley, 1977.

APPLICATIONS

Data Analysis

IMPLEMENTATION DATE

95/4

PROGRAM

```
LET Y1 = NORMAL RANDOM NUMBERS FOR I = 1 1 1000
LET Y2 = CAUCHY RANDOM NUMBERS FOR I = 1 1 1000
LET A1 = MEDIAN ABSOLUTE DEVIATION Y1
LET A2 = MEDIAN ABSOLUTE DEVIATION Y2
LET S1 = STANDARD DEVIATION Y1
LET S2 = STANDARD DEVIATION Y2
PRINT A1 A2 S1 S2
```