

KURTOSIS**PURPOSE**

Compute the kurtosis statistic of a variable.

DESCRIPTION

The kurtosis is the standardized fourth central moment. The formula is:

$$\text{kurtosis} = \frac{\sum_{i=1}^N (x - \bar{x})^4}{(N-1)s^4} \quad (\text{EQ 2-7})$$

where \bar{x} is the sample mean, s is the sample standard deviation and N is the number of observations. Kurtosis is a measure of the “fatness” of a distribution. That is, the higher the kurtosis, the more the distribution is spread out from the mean.

SYNTAX

LET <par> = KURTOSIS <y> <SUBSET/EXCEPT/FOR qualification>

where <y> is the variable for which the kurtosis is computed;

<par> is a parameter where the calculated kurtosis is stored;

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

EXAMPLES

```
LET A1 = KURTOSIS Y1
```

```
LET A1 = KURTOSIS Y1 SUBSET Y1 > -2
```

DEFAULT

None

SYNONYMS

STANDARDIZED FOURTH CENTRAL MOMENT

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RELATED COMMANDS

MEAN	=	Compute the mean of a variable.
STANDARD DEVIATION	=	Compute the standard deviation of a variable.
SKEWNESS	=	Compute the skewness of a variable.
MEDIAN	=	Compute the median of a variable.

APPLICATIONS

Distributional Analysis

IMPLEMENTATION DATE

Pre-1987

PROGRAM

```
LET Y1 = NORMAL RANDOM NUMBERS FOR I = 1 1 100
```

```
LET A1 = KURTOSIS Y1
```

```
LET Y2 = CAUCHY RANDOM NUMBERS FOR I = 1 1 100
```

```
LET A2 = KURTOSIS Y2
```