

DECILE

PURPOSE

Compute a decile for a variable.

DESCRIPTION

Deciles are the percentiles that are multiples of 10. For example, the first decile is the point with 10% of the data below it and 90% above it while the ninth decile is the point with 90% of the data below it and 10% above it.

SYNTAX

LET <par> = <id> DECILE <var> <SUBSET/EXCEPT/FOR qualification>

where <var> is a variable for which the deciles are computed;

<par> is a parameter where the computed decile is stored;

<id> identifies the decile to compute;

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

The <id> can be one of the following:

- FIRST - first decile (or 10th percentile)
- SECOND - second decile (or 20th percentile)
- THIRD - third decile (or 30th percentile)
- FOURTH - fourth decile (or 40th percentile)
- FIFTH - fifth decile (or 50th percentile)
- SIXTH - sixth decile (or 60th percentile)
- SEVENTH - seventh decile (or 70th percentile)
- EIGHTH - eighth decile (or 80th percentile)
- NINTH - ninth decile (or 90th percentile)

EXAMPLES

LET A = FIRST DECILE Y1

LET A = FIFTH DECILE Y1

LET A = SEVENTH DECILE Y1 SUBSET Y1 > 0

NOTE

To compute a given decile, DATAPLOT first sorts the data. Then an index is calculated as $P*(N+1)$ where P is the fractional representation of the decile (e.g., .2 for the second decile). This index identifies the element in the sorted data set that is the decile value. Since this computed index will typically not be an integer, an appropriate weighted average is computed between the value corresponding to the index and the value corresponding to the index + 1.

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

- DECILE PLOT = Generate a decile versus subset plot.
- MINIMUM = Compute the minimum of a variable.
- MAXIMUM = Compute the maximum of a variable.
- EXTREME = Compute the most extreme point of a variable.
- LOWER QUARTILE = Compute the lower quartile of a variable.
- UPPER QUARTILE = Compute the upper quartile of a variable.
- MEAN = Compute a sample mean.
- STANDARD DEVIATION = Compute a sample standard deviation.

APPLICATIONS

Exploratory Data Analysis

IMPLEMENTATION DATE

Pre-1987

PROGRAM

```
LET Y = NORMAL RANDOM NUMBERS FOR I = 1 1 1000
LET A(1) = FIRST DECILE Y1
LET A(2) = SECOND DECILE Y1
LET A(3) = THIRD DECILE Y1
LET A(4) = FOURTH DECILE Y1
LET A(5) = FIFTH DECILE Y1
LET A(6) = SIXTH DECILE Y1
LET A(7) = SEVENTH DECILE Y1
LET A(8) = EIGHTH DECILE Y1
LET A(9) = NINTH DECILE Y1
PRINT A
```