

CHAPTER 3 Analysis Commands

Analysis commands carry out mathematical and statistical analyses such as fitting, transformations, statistical tests, and smoothing. Examples of such commands include FIT, LET, and SMOOTH. The commands in this category are:

Data and function transformations

LET Define variables and parameters, transform data, calculate statistics, roots, derivatives, integrals and more.

LET FUNCTION Define and operate on functions.

Fitting and smoothing

EXACT ... RATIONAL FIT Perform an exact rational function fit.

... FIT Perform a least squares linear or nonlinear fit.

LOWESS SMOOTH Perform a univariate locally weighted least squares smoothing.

... PRE-FIT Perform a pre-fit analysis for starting values.

... SMOOTH Perform a least squares, moving average, or robust (based on moving medians) smoothing of equi-spaced data.

... SPLINE FIT Perform a spline fit.

Experiment design and Analysis of Variance

ANOVA Perform an analysis of variance.

DEX PHD Compute the principle Hessian directions for a Yates analysis.

MEDIAN POLISH Perform a robust analysis of variance.

YATES ANALYSIS Perform a Yates analysis.

Statistical summaries and tests

BARTLET TEST Carry out a k-sample Bartlett test for the homogeneity of variance across samples.

CHI-SQUARE TEST Carry out a 1-sample chi-square test for the standard deviation equal to a specified value.

CONFIDENCE LIMITS Compute confidence limits for the mean.

CROSS TABULATE Tabulate counts, means, standard deviations, ranges, or compute the Chi-square test of independence for data grouped by two variables.

F TEST Carry out a 2-sample F test for the equality of the standard deviations.

RUNS Carry out a runs analysis.

SUMMARY Compute summary statistics.

T TEST Carry out 1- or 2-sample t test for the mean.

TABULATE

Tabulate counts, means, standard deviations, and ranges of grouped data.

Quality Control

CAPABILITY ANALYSIS

Generate a table of capability analysis statistics.

The ... in some of the commands indicates user-defined options for the command, as in:

LINEAR SPLINE FIT, CUBIC SPLINE FIT, etc.

LINEAR SMOOTH, CUBIC SMOOTH, ROBUST SMOOTH, etc.

EXACT 1/1 RATIONAL FIT, EXACT 2/3 RATIONAL FIT, etc.

Many mathematical, statistical, and matrix capabilities are available as subcommands under the LET command. The individual subcommands available under LET are documented in Volume II of the DATAPLOT Reference Manual.