Statistical Discovery.™ From SAS.

JMP® 15 Quick Guide

Instructions presume an open data table, default preference settings, and appropriately typed, user-specified variables of interest.

Graphing

What	How
Frequency Distribution	Analyze > Distribution (For categorical variables frequencies are displayed, otherwise quantiles and summary statistics are)
Bar Chart	Graph > Graph Builder > drag continuous variable to Y and categorical to X > click bar icon *Or:* Graph > Legacy > Chart
Pie Chart	Graph > Graph Builder > drag continuous variable to Y and categorical to X > click pie icon *Or:* Graph > Legacy > Chart > Options > Pie Chart
Histogram	Analyze > Distribution *Or:* Graph > Graph Builder > drag variable to Y or to X > click histogram icon
Stem and Leaf Plot	Analyze > Distribution; select lower ▾ Stem and Leaf
Scatter Plot 2-D	Graph > Graph Builder > drag continuous variable to Y and another one to X *Or:* Analyze > Fit Y by X (Bivariate) *Or:* Graph > Overlay Plot
Scatter Plot 3-D	Graph > Scatterplot 3-D
Scatter Plot Matrix	Graph > Scatterplot Matrix *Or:* Analyze > Multivariate Methods > Multivariate
Trellis Plot	Graph > Graph Builder > drag one column to Y and one to X; drag nominal or ordinal column to Wrap
Line Chart	Graph > Graph Builder > drag continuous variable to Y and another one (time ordered) to X > click line icon *Or:* Graph > Overlay Plot; select ▾ Y options > Connect Thru Missing
Box Plot - One Level	Graph > Graph Builder > continuous column to Y > click box plot icon *Or:* Analyze > Distribution
Box Plot - Two or More Levels	Graph > Graph Builder > continuous column to Y and categorical to X > click box plot icon *Or:* Analyze > Fit Y by X (choose continuous Y and categorical X); select ▾ Display Options > Box Plot
Geospatial Mapping	Graph > Graph Builder > drag a column containing city, county, state, or country to the Map Shape zone (bottom left) *Or:* Use latitude and longitude as X and Y, right-click center and pick Graph > Background Map to choose map

Basic Statistics

What	How
Descriptive Statistics	Analyze > Distribution; (basic stats are shown by default; to see more select lower ▼ Display Options > Customize Summary Statistics) *Or:* Analyze > Tabulate *Or:* Tables > Summary *Or:* Cols > Columns Viewer; select columns then click Show Summary
z- or t- test with confidence intervals	1-Sample: Analyze > Distribution; select lower ▼ Test Mean 2-Sample: Analyze > Fit Y by X (cont. Y and 2-level cat. X); select ▼ t Test or Means/ANOVA/Pooled t Paired t: Analyze > Specialized Modeling > Matched Pairs
Testing Proportions *(make 0/1 indicator Nominal or Ordinal)*	1 Proportion: Analyze > Distribution; select lower ▼ Test Probabilities 2 Proportions: Analyze > Fit Y by X
Contingency Table – Chi-Square Test	Analyze > Fit Y by X (both X and Y must be categorical, and labels must be in columns)
Covariance	Analyze > Multivariate Methods > Multivariate; select ▼ Covariance matrix
Correlation	Analyze > Multivariate Methods > Multivariate *Or:* Analyze > Fit Y by X > Density Ellipse
Test for Normality/Goodness-of-Fit	Analyze > Distribution; select ▼ continuous Fit > Normal; select ▼ by Fitted Normal > Goodness of Fit
Sample Size and Power Calculations	DOE > Design Diagnostics > Sample Size and Power

Probability and Random Variables

What	How
Probability Variables	On data table: 1. Select ▼ Columns > New Column; 2. Right click on new column > Formula; 3. Select Probability from Functions Window; 4. Select desired probability function. *Note: For more information on the expected parameters see Help under Probability Functions.*
Random Variables	On data table: 1. Select ▼ Columns > New Column; 2. Right click on new column; 3. Select New Formula Column > Random; 4. Select desired Random function *or* On data table: 1. Select ▼ Columns > New Column; 2. Right click on new column; 3. Select Formula; 4. Select Random from Functions Window; 5. Select desired Random function. *Note: For more information on the expected parameters see Help under Random Functions.*
Distribution Fitting	Analyze > Distribution; select lower ▼ continuous Fit or Discrete Fit, then select desired distribution(s).

Analysis of Variance

What	How
One-Way	Analyze > Fit Y by X; select ▾ Means/Anova (Y must be continuous; X categorical)
Two or More Factors	Analyze > Fit Model
Randomized Blocks	Analyze > Fit Y by X; include a categorical column in Block role
Multiple Comparison Methods	Analyze > Fit Y by X; select ▾ Compare Means
Test for Unequal Variances	Analyze > Fit Y by X; select ▾ Unequal Variances

Regression

What	How	
Scatterplot	Analyze > Fit Y by X (Bivariate) *Or:* Graph > Graph Builder > drag continuous column to Y and another to X	
Ordinary Least Squares	One Predictor: One or More Predictors:	Analyze > Fit continuous Y by continuous X; select ▾ Fit Line *Or:* click line icon from Scatterplot in Graph Builder (see above). Analyze > Fit Model
Logistic Regression	One Predictor: One or more Predictors:	Analyze > Fit categorical Y by continuous X Analyze > Fit Model
Multiple Regression	Analyze > Fit Model	
Stepwise Regression	Analyze > Fit Model > Personality; select Stepwise	
Residual Analysis	Analyze > Fit Model; Run Model; select ▾ Row Diagnostics *Or:* Analyze > Fit Y by X; select ▾ and choose a fit; select ▾ from fit report and “Save Residuals” or “Plot residuals”	
Interaction Plots	Analyze > Fit Model with interaction effects; Run Model; select ▾ Factor Profiling > Interaction Plots	
Durbin-Watson Test	Analyze > Fit Model; Run; select ▾ Row Diagnostics > Durbin-Watson Test	

Nonparametric Techniques

What	How
Wilcoxon Rank Sum Test	Analyze > Fit Y by X (Continuous Y by Categorial X); select ▼ Nonparametric > Wilcoxon Test
Fisher's Sign Test (for 2x2 tables only)	Analyze > Fit Y by X (categorical by categorical)
Wilcoxon Signed Rank Sum Test	Analyze > Distribution on continuous X; select lower ▼ Test Mean > check Wilcoxon Signed Rank Box
Kruskal-Wallis Test	Analyze > Fit Y by X (continuous by categorical); select ▼ Nonparametric > Wilcoxon Signed Rank Test
Spearman's ρ	Analyze > Multivariate Methods > Multivariate; select ▼ Nonparametric Correlations > Spearman's ρ

Time Series

What	How
Time Series Plot	Analyze > Specialized Modeling > Time Series
Moving Averages	Analyze > Specialized Modeling > Time Series; select ▼ Smoothing Models > Simple Moving Average
Exponential Smoothing	Analyze > Specialized Modeling > Time Series; select ▼ Smoothing Models > Choose Method
Holt-Winters (Additive) Method	Analyze > Specialized Modeling > Time Series; select ▼ Smoothing Model > Winters Method

Advanced Modeling and Multivariate Methods

What	How
Logistic and Multiple Regression	Analyze > Fit Model
Clustering	Analyze > Clustering > Choose Method
Neural Networks	Analyze > Predictive Modeling > Neural
Decision Trees	Analyze > Predictive Modeling > Partition
Factor Analysis	Analyze > Consumer Research > Multiple Factor Analysis
Principal Component Analysis	Analyze > Multivariate Methods > Principal Component

Multiple Correspondence Analysis	Analyze > Consumer Research > Multiple Correspondence Analysis
Partial Least Squares	Analyze > Multivariate Methods > Partial Least Squares *Or:* Analyze > Fit Model > Personality; select Partial Least Squares
JMP PRO **Model Comparison**	Analyze > Predictive Modeling > Model Comparison *Or:* Analyze > Predictive Modeling > Formula Depot; select ▾ Model Comparison
JMP PRO **Generalized Regression**	Analyze > Fit Model > Personality; select Generalized Regression
JMP PRO **Mixed Models**	Analyze > Fit Model > Personality; select Mixed Model

Quality Control

What	How	
Control Charts	Run Chart: X-Bar R or S: Individual Measurements (IR): P, NP, C or U Chart: UWMA Chart: EWMA Chart: CUSUM: G Chart: T Chart:	*Analyze > Quality and Process > Control Chart > Run Chart *Analyze > Quality and Process > Control Chart > Control Chart > X-Bar *Analyze > Quality and Process > Control Chart > Control Chart > IR *Analyze > Quality and Process > Control Chart > Control Chart > P, NP, C or U Analyze > Quality and Process > Control Chart > Control Chart > UWMA Analyze > Quality and Process > Control Chart > Control Chart > EWMA Analyze > Quality and Process > Control Chart > Control Chart > CUSUM Analyze > Quality and Process > Control Chart Builder, select Rare Event Analyze > Quality and Process > Control Chart Builder, select Rare Event, change sigma limits to Weibull
	* Can also be created with the Control Chart Builder: Analyze > Quality and Process > Control Chart Builder	
Pareto	Analyze > Quality and Process > Pareto Plot	
Ishikawa (“Fishbone”) Diagram	Analyze > Quality and Process > Diagram	
Variability Chart (Multi-Vari Chart)	Analyze > Quality and Process > Variability / Attribute Gauge Chart	
Capability	One Variable: More than One Variable: With additional graphs on same output: Analyze > Quality and Process > Control Chart > IR or X-Bar Chart; check Capability Box > OK	Analyze > Distribution, select lower ▾ Capability Analysis Analyze > Quality and Process > Process Capability
Measurement Systems Analysis	Analyze > Quality and Process > Measurement Systems Analysis *Or:* Analyze > Quality and Process > Variability / Attribute Gauge Chart	

Design of Experiments (DOE)

What	How

Custom Design (optimal designs)	DOE > Custom Design
Factorial Design	DOE > Classical > Full Factorial Design *Or:* DOE > Classical > Screening Design
Screening Design	DOE > Classical > Screening Design
Response Surface Design	DOE > Classical > Response Surface Design

Other designs are also available under the DOE menu.

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For complete information and tutorials, please refer to the JMP Help available under “Help > Books” and “Help > Tutorials.”

For one-page guides, videos and additional tutorials, see the Learning Library at **jmp.com/learn.**

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