







## JMP® 12 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 moments are.)
Bar Chart	Graph > Graph Builder > drag continuous variable to Y and categorical to X > click bar icon Or: Graph > Chart
Pie Chart	Graph > Graph Builder > drag continuous variable to Y and categorical to X > click pie icon Or: Graph > 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 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 > Matched Pairs

Continued to the next page.






## Basic Statistics (cont.)

What	How
Testing Proportions ( <i>make 0/1 indicator Nominal or Ordinal</i> )	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 > 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. <i>Note: For more information on the expected parameters, see Help under Probability Functions.</i>
Random Variables	On data table: 1. Select  Columns > New Column; 2. Right-click on new column > Column Info; 3. Click on drop down box next to Initialize Data > Random. <i>Note: For more information on the expected parameters, see Help under Random Function.</i>
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  Means/Anova; select  Compare Means
Test for Unequal Variance	Analyze > Fit Y by X; select  Means/Anova; select  Unequal Variances

## Regression





What	How
Scatter Plot	Analyze > Fit Y by X (Bivariate) Or: Graph > Graph Builder > drag continuous column to Y and another to X
Ordinary Least Squares	One Predictor: Analyze > Fit continuous Y by continuous X; select  Fit Line Or: click line icon from Scatterplot in Graph Builder (see above). One or more Predictors: Analyze > Fit Model
Logistic Regression	One Predictor: Analyze > Fit categorical Y by continuous X One or more Predictors: Analyze > Fit Model
Multiple Regression	Analyze > Fit Model

Continued to the next page.




## Regression (cont.)

What	How
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; select  Nonparametric > Wilcoxon Test
Fishers 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 Test
Spearman's $\rho$	Analyze > Multivariate Methods > Multivariate; select  Nonparametric Correlations > Spearman's $\rho$


## Time Series

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

## Advanced Modeling and Multivariate Methods

What	How
Logistic and Multiple Regression	Analyze > Fit Model
Clustering	Analyze > Multivariate Methods > Cluster
Neural Networks	Analyze > Modeling > Neural
Decision Trees	Analyze > Modeling > Partition
Factor Analysis	Analyze > Consumer Research > 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
 Model Comparison	Analyze > Modeling > Model Comparison
 Generalized Regression	Analyze > Fit Model > Personality; select Generalized Regression
 Mixed Models	Analyze > Fit Model > Personality; select Mixed Model

## Quality Control

What	How
Control Charts	Run Chart: *Analyze > Quality and Process > Control Chart > Run Chart X-Bar R or S: *Analyze > Quality and Process > Control Chart > Control Chart > XBar Individual Measurements (IR): *Analyze > Quality and Process > Control Chart > Control Chart > IR P, NP, C or U Chart: *Analyze > Quality and Process > Control Chart > Control Chart > P, NP, C or U UWMA Chart: Analyze > Quality and Process > Control Chart > Control Chart > UWMA EWMA Chart: Analyze > Quality and Process > Control Chart > Control Chart > EWMA CUSUM: Analyze > Quality and Process > Control Chart > Control Chart > CUSUM G Chart: Analyze > Quality and Process > Control Chart Builder, select Rare Event T Chart: Analyze > Quality and Process > Control Chart Builder, select Rare Event, change sigma limits to Weibull  <i>*Can also be created with the Control Chart Builder: Analyze &gt; Quality and Process &gt; Control Chart Builder</i>
Pareto	Analyze > Quality and Process > Pareto
Ishikawa ("Fishbone") Diagram	Analyze > Quality and Process > Diagram
Variability Chart(Multi-Vari Chart)	Analyze > Quality and Process > Variability / Attribute Gauge Chart
Capability	One Variable: Analyze > Distribution, select lower  Capability Analysis More than One Variable: Analyze > Quality and Process > Capability  With additional graphs on same output: Analyze > Quality and Process > Control Chart > IR or X-Bar Chart; check Capability Box. > OK
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 > Optimal Design
Factorial Design	DOE > Full Factorial Design Or: DOE > Screening Design
Screening Design	DOE > Screening Design
Response Surface Design	DOE > Response Surface Design

Other designs are also available under the DOE menu.

[jmp.com/academic](http://jmp.com/academic)

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](http://jmp.com/learn).

For discussions and additional content join the JMP Academic Community at [community.jmp.com/academic](http://community.jmp.com/academic).



SAS Institute Inc. World Headquarters

+1 919 677 8000

JMP is a software solution from SAS. To learn more about SAS, visit [sas.com](http://sas.com)

For JMP sales in the US and Canada, call 877 594 6567 or go to [jmp.com](http://jmp.com)

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies. 107706\_S139391.0515