



Minitab[®] 17

Statistical Software



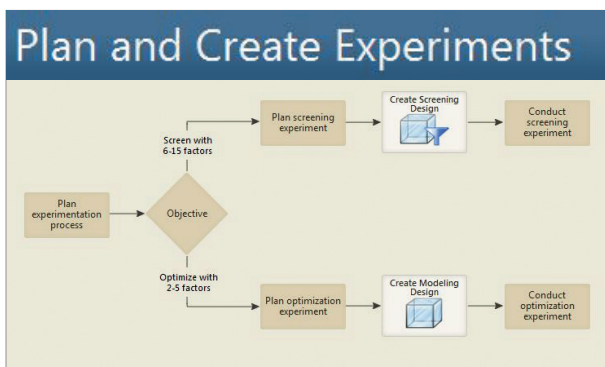
Learn What's New ►►

Upgrade now to access new and improved statistical features and other enhancements that make it even easier to analyze your data.

The Assistant

Let Minitab's Assistant menu lead you through your analysis and help you interpret your results with confidence—now with DOE, Multiple Regression, and improved Graphical Analysis.

Improvements have also been made throughout the Assistant menu—including enhanced guidance for Measurement Systems Analysis, Capability Analysis, Hypothesis Tests, and Control Charts.



Follow an interactive decision tree to plan and create experiments, including both screening and modeling designs for DOE.

Use the new multiple regression option to analyze more than one predictor, including a categorical predictor.

Test setup

What target do you want to test the mean against?

Target:

What do you want to determine?

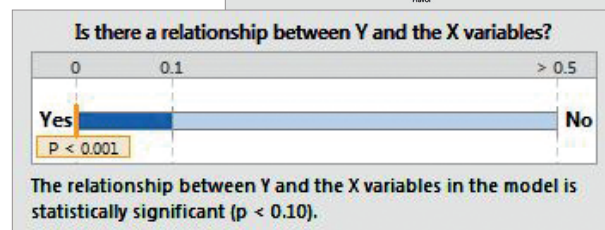
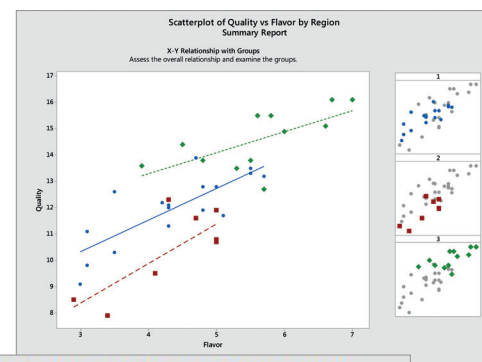
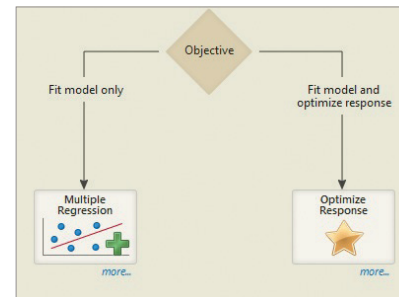
☐ Is the mean of Weight greater than 920?

☐ Is the mean of Weight less than 920?

☒ Is the mean of Weight different from 920?

Run your analysis or experiment using a simplified interface that is easy to understand.

Use the comprehensive reports and provided interpretation to present your results. >>

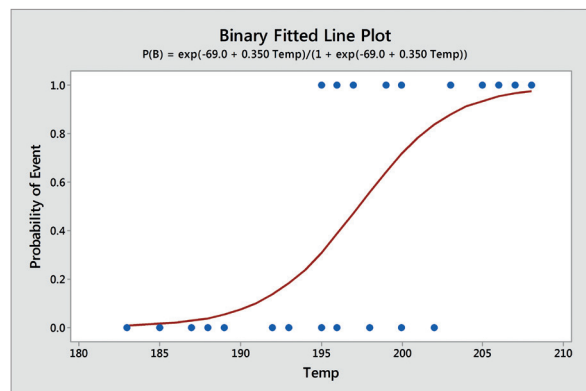
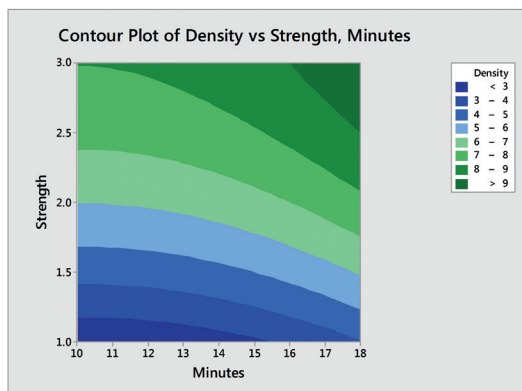
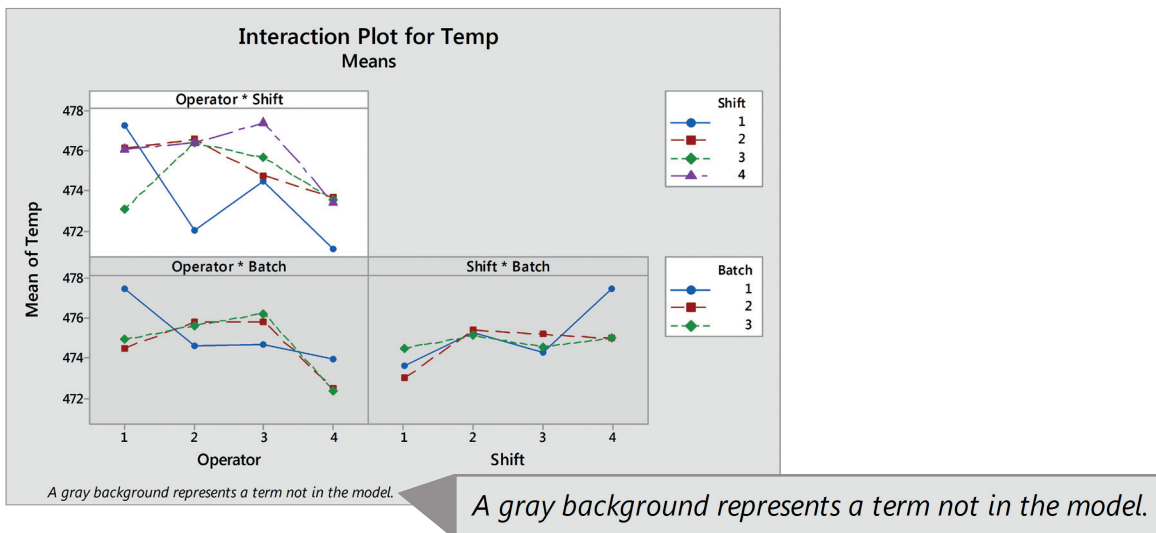


Regression and ANOVA



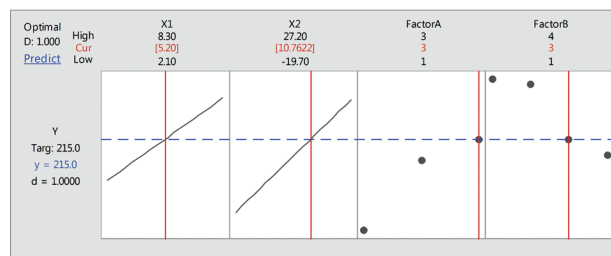
Explore relationships between variables with new features and improved workflow for regression, binary logistic regression, and ANOVA.

▼ Instantly identify important variables using automatic model selection.



▲ Visually explain your results with more graphs, including main effects, interaction, contour, and surface plots.

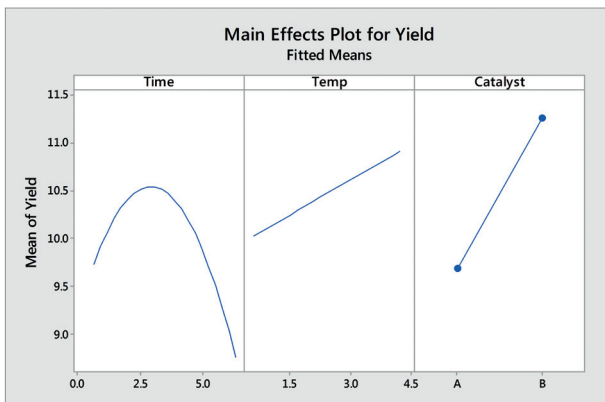
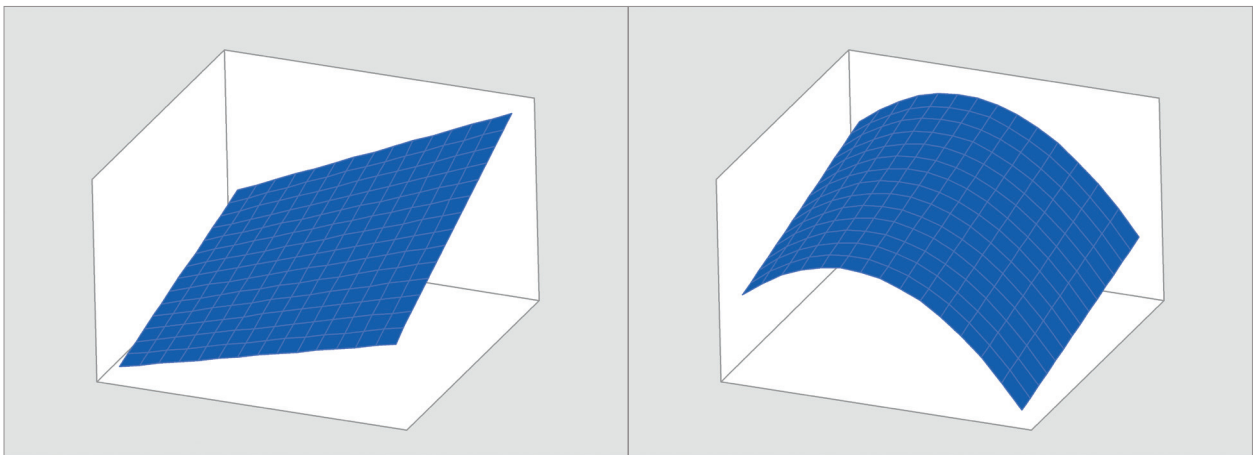
Find optimal settings for each of your variables with response optimizer. ►►



DOE Improvements

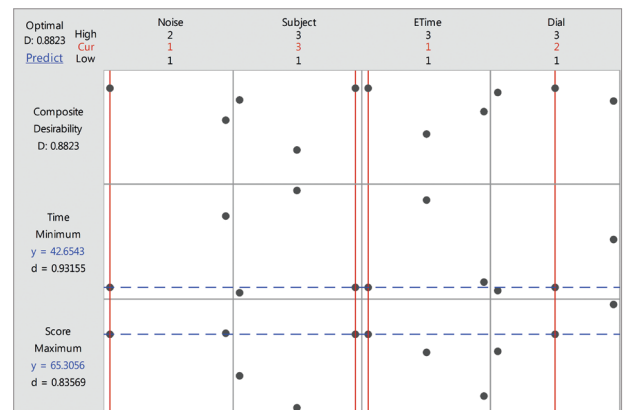
DOE enhancements allow you to more effectively determine which factors and interactions affect your processes.

▼ Use automatic model selection to instantly identify important variables in factorial and response surface designs.

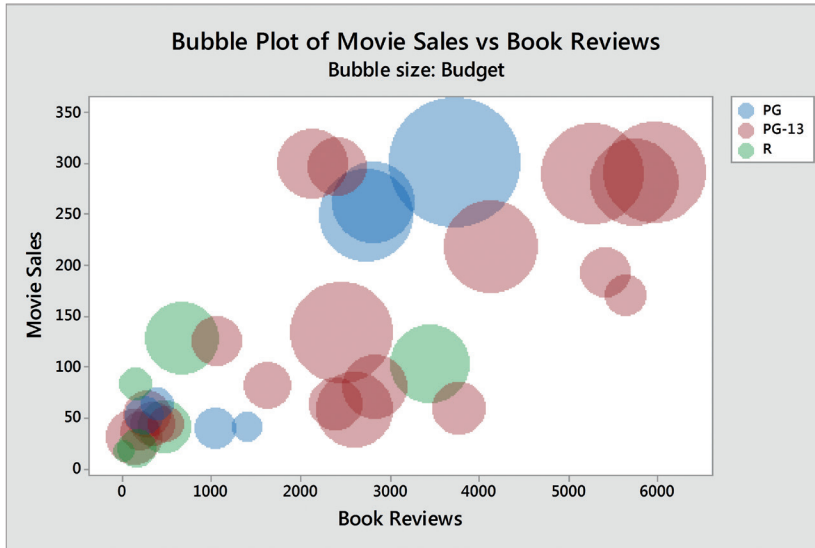


◀◀ Include categorical factors in your response surface designs.

Apply the response optimizer to general factorial designs. ▶▶



New and Improved Statistical Tools



◀◀ Bubble Plot

Graph the relationship between three or four variables in a two-dimensional space by plotting the X and Y variables, with bubble size representing the third variable.

Poisson Regression ▶▶

Investigate relationships between variables when the response describes counts, such as the number of machine failures or caesarean sections at a hospital.

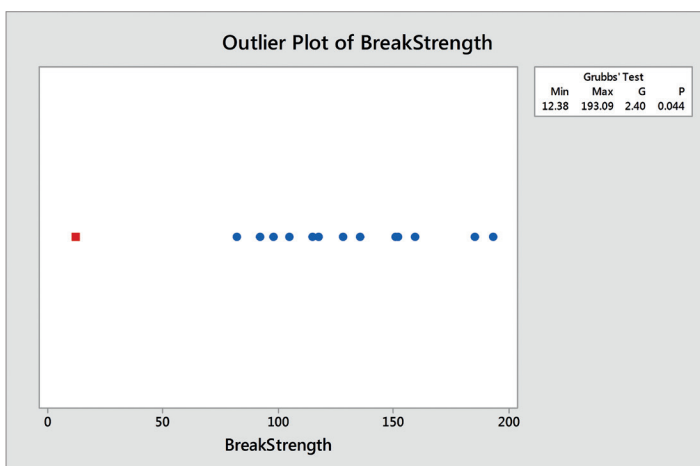
Poisson Regression Analysis

Method

Link function Natural log
Rows used 80

Deviance Table

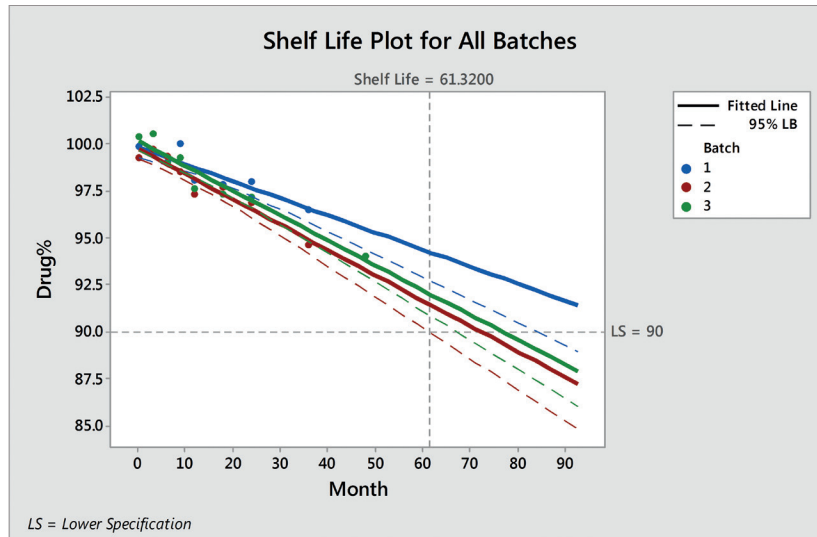
Source	DF	Adj Dev	Adj Mean	Chi-Square	P-Value
Regression	2	11.697	5.848	11.70	0.003
Weight	1	8.332	8.332	8.33	0.004
Length	1	11.001	11.001	11.00	0.001
Error	77	274.810	3.569		
Total	79	286.507			



◀◀ Outlier Tests

Use Grubbs' and Dixon's Tests to detect an outlier in a dataset.

New and Improved Statistical Tools

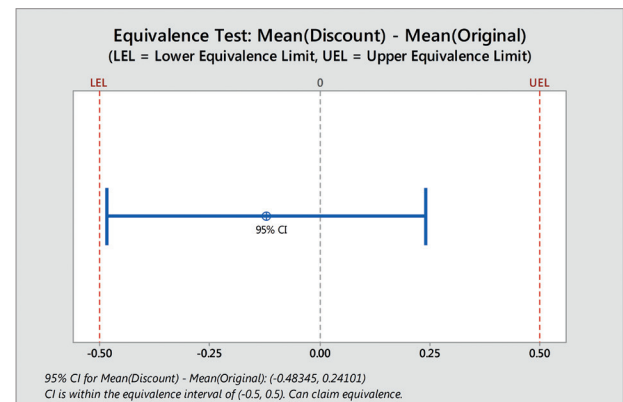


◀◀ Stability Studies

Analyze the stability of a product over time and determine its shelf life. For example, a pharmaceutical company can study the relationship between drug concentration and time across different batches.

Equivalence Testing ▶▶

Determine whether the means for product or process measurements are close enough to be considered equivalent.



Additional Enhancements

Portuguese Translation

Every part of the software has been translated into Portuguese, from the statistics and the interface to the Assistant menu and all Help content.

Minitab 17 is also available in English, French, German, Japanese, Korean, Simplified Chinese, and Spanish.

Updated Graphics

We refreshed the entire look of our graphs by modernizing the color palette, updating the fonts, and more. Now you have even greater opportunity to create clear and impressive presentations.

And More!

Visit Minitab.com to learn more about Minitab 17.

Minitab 17 Features List



Assistant

- Menu that easily leads you through your analysis
- Helps you choose the right tool
- Provides interpretation of your output
- Conducts assumption checks to ensure your analysis is successful
- Creates reports that can be exported to PowerPoint

Basic Statistics

- Descriptive statistics
- One-sample Z-test, one- and two-sample t-tests, paired t-test
- One and two proportions tests
- One- and two-sample Poisson rate tests
- One and two variances tests
- Correlation and covariance
- Normality test
- Outlier test
- Poisson goodness-of-fit test

Graphics

- Easily create professional-looking graphics
- Scatterplots, matrix plots, boxplots, dotplots, histograms, charts, time series plots, etc.
- Bubble plot
- Contour and rotating 3D plots
- Probability and probability distribution plots
- Edit attributes: axes, labels, reference lines, etc.
- Recreate custom graphs with new data
- Easily place multiple graphs on one page
- Automatically update graphs as data change
- Brush graphs to explore points of interest
- Export: TIF, JPEG, PNG, BMP, GIF, EMF

Regression

- Linear regression
- Binary, ordinal and nominal logistic regression
- Nonlinear regression
- Stability studies
- Orthogonal regression
- Partial least squares
- Poisson regression
- Plots: residual, factorial, contour, surface, etc.
- Stepwise and best subsets
- Response prediction and optimization

Analysis of Variance

- ANOVA
- General Linear Model
- MANOVA
- Multiple comparisons
- Response prediction and optimization
- Test for equal variances
- Plots: residual, factorial, contour, surface, etc.
- Analysis of means

Statistical Process Control

- Run chart
- Pareto chart
- Cause-and-effect diagram
- Variables control charts: XBar, R, S, XBar-R, XBar-S, I, MR, I-MR, I-MR-R/S, zone, Z-MR

- Attributes control charts: P, NP, C, U, Laney P' and U'
- Time-weighted control charts: MA, EWMA, CUSUM
- Multivariate control charts: T², generalized variance, MEWMA
- Rare events charts: G and T
- Historical/shift-in-process charts
- Box-Cox and Johnson transformations
- Individual distribution identification
- Process capability: normal, non-normal, attribute, batch
- Process capability for multiple variables
- Process Capability Sixpack™
- Tolerance intervals
- Acceptance sampling and OC curves

Measurement Systems Analysis

- Data collection worksheets
- Gage R&R Crossed: ANOVA and Xbar-R methods
- Gage R&R Nested
- Gage R&R Expanded
- Misclassification probabilities
- Gage run chart
- Gage linearity and bias
- Type 1 Gage Study
- Attribute Gage Study – AIAG analytic method
- Attribute agreement analysis

Design of Experiments

- Two-level factorial designs
- Split-plot designs
- General factorial designs
- Plackett-Burman designs
- Response surface designs
- Mixture designs
- D-optimal and distance-based designs
- Taguchi designs
- User-specified designs
- Analyze variability for factorial designs
- Botched runs
- Effects plots: normal, half-normal, Pareto
- Response prediction and optimization
- Plots: residual, main effects, interaction, cube, contour, surface, wireframe

Reliability/Survival

- Parametric and nonparametric distribution analysis
- Goodness-of-fit measures
- ML and least squares estimates
- Exact failure, right-, left-, and interval-censored data
- Accelerated life testing
- Regression with life data
- Reliability test plans
- Threshold parameter distributions
- Repairable systems
- Multiple failure modes
- Probit analysis
- Weibayes analysis
- Hypothesis tests on distribution parameters

- Plots: distribution, probability, hazard, survival
- Warranty analysis

Power and Sample Size

- Sample size for estimation
- Sample size for tolerance intervals
- One-sample Z, one- and two-sample t
- Paired t
- One and two proportions
- One- and two-sample Poisson rates
- One and two variances
- Equivalence tests
- One-Way ANOVA
- Two-level, Plackett-Burman and general full factorial designs
- Power curves

Multivariate

- Principal components analysis
- Factor analysis
- Discriminant analysis
- Cluster analysis
- Correspondence analysis
- Item analysis and Cronbach's alpha

Time Series and Forecasting

- Time series plots
- Trend analysis
- Decomposition
- Moving average
- Exponential smoothing
- Winters' method
- Auto-, partial auto-, and cross correlation functions
- ARIMA

Nonparametrics

- Sign test
- Wilcoxon test
- Mann-Whitney test
- Kruskal-Wallis test
- Mood's median test
- Friedman test
- Runs test

Equivalence Tests

- One- and two-sample, paired and 2x2 crossover design

Tables

- Chi-square, Fisher's exact, and other tests
- Chi-square goodness-of-fit test
- Tally individual variables

Simulation and Distributions

- Random number generator
- Density, cumulative distribution, and inverse cumulative distribution functions
- Random sampling

Macros and Customizability

- Customizable menus and toolbars
- Extensive preferences and user profiles
- DMAIC toolbar
- Powerful macro capability
- COM-enabled automation



Learn more and find a local Minitab representative at www.minitab.com.