

# Index *(Note: for more program and statistical details check program Help.)*

- Addelman, 11-3
- adequate precision, 12-7
- adjusted linear effect, 12-7
- alias structure, 3-24
- aliased interactions
  - graphical investigation, 3-29
- aliasing, 3-27, 3-34, 6-10, 9-19, 12-4
  - warning, 3-28, 3-35, 13-7
- analysis
  - process, 2-6
- analysis of variance, 2-7, 3-10, 6-13, 12-2
  - mixtures, 7-13
  - sum of squares type, 13-6
- analysis sequence, 12-2
- Anderson and Whitcomb, 9-8, 10-6, 12-1
- augmentation, 3-26, 9-15
  - d-optimal, 9-17
  - two-level factorial to central composite design, 9-16
- axial points, 6-3, 11-8
  - alpha value, 6-4, 11-8
- blocking, 4-14, 6-25, 11-2, 11-5, 11-24, 12-9
  - adding new blocks, 2-14
  - central composite design, 6-2, 11-9
  - sorting, 2-16
- Box, 11-25
- Box-Behnken, 11-11
- Box-Cox, 3-13, 12-3
- candidate points, 11-12
  - creating with factorial, 9-14
  - creating your own, 9-12
  - crossed design, 8-3
  - mixture, 11-20
  - user-defined selection, 11-23
- canonical polynomial, 11-21
- categorical factors, 9-5, 13-6
  - adding to mixture design, 9-6
  - adding to response surface design, 11-16
  - crossed design, 11-24
  - making numeric, 4-7
  - one-factor design, 11-15
- center points, 3-2, 6-15, 9-17, 9-18, 11-3, 11-8, 11-15, 11-25
- central composite design (CCD), 6-1, 9-17, 9-18, 11-8
  - options, 11-10
  - small, 11-10
- coding, 11-5, 13-7, 13-9
  - general factorial (categorical), 11-6
  - mixtures, 7-6, 11-17
  - response surface designs, 6-6
  - two-level factorials, 3-5
- confidence interval, 9-23
- constraints
  - equality, 13-20
  - multilinear, 9-9, 11-12, 11-17
  - ratio, 13-17, 13-18
- contour plot, 3-18, 6-16, 13-7
  - flag, 7-19
  - mixture, 7-17
- CONVERT algorithm, 11-20
- copy
  - with headings, 13-4
- Cornell, 8-1, 12-1
- cost equation. *See* equation-only response
- crossed design, 8-1, 11-23
- cube plot, 3-17
- curvature, 9-16, 9-18, 11-3, 11-9, 11-20, 12-9
- data entry
  - adding new rows, 2-15
  - duplicating rows, 2-16
  - form, 2-4
  - ignoring, 2-14
- Derringer and Suich, 6-28
- design
  - coding, 11-25
  - description, 3-21, 13-7
  - editing, 11-24
  - evaluation, 3-24, 3-27, 3-34, 9-18, 11-21, 12-4
  - Id, 11-25
  - layout, 9-18, 11-5, 11-8, 13-7
  - sorting by standard order, 11-25
  - standard order, 11-5

status, 13-8  
 design points  
   showing on plots, 4-5  
 design status, 6-26  
 desirability, 6-29, 12-10  
   graphs, 6-32, 7-30  
   histogram, 7-29  
   importance, 12-12  
   importance, 6-30, 7-27  
   ramps, 6-31, 7-29  
   weights, 12-11  
   weights, 6-29, 7-27  
 determinant, 9-23  
 distance-based design, 11-15  
   mixture, 11-22  
   modified, 11-15, 11-22  
 d-optimal design, 8-9  
   algorithm, 11-14  
   bootstrap, 11-14  
   categorical, 9-6  
   mixture, 11-20  
   response surface, 11-11  
 Draper and Lin, 11-10  
 Draper and Smith, 12-1  
 duplicating design points, 7-8  
 effects  
   half-normal plot, 3-7  
   normal plot, 12-4  
   selection  
     by probability, 4-3  
     standardized, 12-4  
 eigenvalues, 9-23  
 equation  
   coded, 6-14  
 equation-only response, 10-4  
 expected mean squares (EMS), 4-23  
 Factors Tool, 3-16, 3-21, 6-17, 6-39, 7-22, 8-7, 13-9  
   Sheet mode, 3-17  
 flipping axes, 3-35  
 foldover  
   complete, 3-26  
   single factor, 3-33  
 format  
   data, 3-5  
 G efficiency, 9-23  
 general factorial design, 4-1, 11-4  
   d-optimal, 11-4  
 generators. *See* two-level factorial design:  
   fractional generators  
   graph preferences, 6-19, 7-18, 13-7  
   half-normal plot. *See* effects, half-normal plot  
   hardware requirements, 1-3  
   Help, 9-1, 13-1  
     context-sensitive, 13-2  
     statistical, 13-3  
     via right-click, 3-11  
     What's This option, 3-2, 8-9, 13-2  
   hexagon design, 11-15  
   hierarchy, 3-29, 12-3  
   hybrid design, 11-11  
   icons. *See* installation, icons  
   installation  
     icons, 1-9  
     network, 1-6  
     single-user, 1-3  
     tutorials, 1-8  
     uninstall, 1-6  
   interaction, 11-2, 12-4  
   irregular fractions, 11-3  
   John, 11-3  
   Kraber, 9-18, 12-1  
   lack-of-fit, 6-11, 7-11, 9-21, 11-13, 11-18, 11-22  
   least significant difference (LSD), 2-11, 3-16, 5-9, 12-5  
   legend, 3-18  
   Lenth, 3-9, 3-30  
   leverage, 9-18, 9-22, 11-13, 11-19, 11-22, 13-6  
   logit, 12-3  
   matrix condition number, 9-23  
   missing data, 12-4  
   mixture design, 7-1, 10-1, 11-16  
     centroid, 12-9  
     combining components, 11-25  
     constraints, 11-17  
     constraints adjustment, 7-3  
     screening, 11-19  
   model coefficients, 9-23, 11-11, 12-8  
   model reduction, 6-12, 10-1, 11-20  
     backward elimination, 8-5, 10-3  
     forward selection, 10-4  
     step-wise, 10-1  
   model selection, 7-12  
   models  
     adding terms, 6-12, 7-13, 10-2  
     mixture, 12-8  
     slack variable, 11-21  
     two-factor interaction, 6-10  
   Montgomery, 3-1, 4-1, 4-11, 4-21, 4-27, 11-1, 12-1

- multicollinearity, 9-21, 9-23
- Myers, 6-28, 11-1, 12-1
- Nelder-Mead, 12-13
- nested design, 4-21
- network. *See* installation, network
- numerical optimization, 6-26, 12-10, 13-6
  - algorithm, 12-13
  - mixtures, 7-25
  - options, 6-30, 7-27
  - parameters, 6-28
  - report, 6-30
- one-factor design, 2-1, 11-15
- one-factor plot, 3-14
- optimization
  - graphical, 6-38, 7-36, 12-10
- orthogonality, 9-21
- outlier t, 2-10, 3-12, 7-15, 9-5
- overlay plot. *See* optimization, graphical
- pentagon design, 11-15
- perturbation plot, 6-18
- Piepel, 11-20, 12-9
- Plackett-Burman, 11-4
- point prediction, 3-20, 6-25, 13-9
  - by clicking point on effects plot, 3-16
  - flag, 6-21
  - mixture, 7-22
- point type, 7-9, 11-8, 11-25
  - display, 7-8
- pop out view, 13-5
- power, 11-26
- predicted residual sum of squares (PRESS), 7-12, 12-6
- predicted value, 12-7
- prediction variance, 9-23
- preferences, 11-14, 13-6
- PRESS. *See* predicted residual sum of squares
- propagation of error (POE), 6-34, 7-33, 10-6, 12-14
  - mixture, 12-16
  - transformed response, 12-17
- pure error, 9-21, 11-8, 11-15, 11-20, 12-5
- QR decomposition algorithm, 12-3
- randomization, 3-4, 4-13, 12-9
- replicates, 3-2, 9-18, 11-15, 11-19, 11-22
- residuals, 12-7
  - case statistics table, 6-15, 7-14
  - diagnostic plots, 2-9
  - normal plot, 2-9, 6-15, 7-15
  - studentized, 3-11
  - versus predicted values, 2-10, 3-11, 7-16
- resolution, 3-2, 11-2
- response prediction. *See* point prediction
- response surface methods (RSM), 6-1, 11-7
- right mouse clicks, 11-24
- scatterplot, 3-6, 6-8
- Scheffe, 11-21
- sequential model sum of squares, 6-10, 7-10, 12-6
- simplex designs, 11-17
- simplex-centroid design, 11-19
- simplex-lattice design, 7-2, 11-18
  - augmentation, 7-4
  - augmenting, 11-18
- simulations, 13-10
- Sitter, Chen and Feder, 9-2
- Snee, 9-9
- sorting
  - response, 2-6
- split plot, 4-11, 13-13
- standard error, 11-8, 12-4, 12-8, 13-8
  - plot, 7-21
  - plot, 6-23, 9-24, 11-9
- standard order, 2-5
- Sun, Wu and Chen, 9-2
- support, 1-3, 1-10
- Taguchi design, 5-1, 11-5
- three-D plot, 3-19, 6-22, 13-7
  - mixture, 7-20
- three-level factorial design, 11-11
- trace plot, 7-17, 12-9
- transformation, 2-6, 6-10, 7-10, 12-2
  - power, 12-3
- t-test, 12-5
- two-level factorial design, 11-2
  - fractional, 11-2
  - fractional factorial, 3-23
  - fractional generators, 9-1
  - full factorial, 3-1
  - split plot, 13-13
- user-defined design, 8-1, 11-16
- variance inflation factor (VIF), 9-21
- Weisberg, 12-1