

Keywords in Context for the NAG C Library, Mark 6

Robust estimation, median, median	absolute deviation, robust standard deviation	g07dac
	ACF : See Autocorrelations	
	ODEs, IVP, Adams method, until function of solution is zero, ...	d02cjc
	ODEs, IVP, Adams method with root-finding	d02qfc
	1-D quadrature, adaptive , finite interval, strategy due to Piessens and ...	d01sjc
	1-D quadrature, adaptive , finite interval, method suitable for oscillating ...	d01skc
	1-D quadrature, adaptive , finite interval, allowing for singularities at ...	d01slc
	1-D quadrature, adaptive , infinite or semi-infinite interval	d01smc
	1-D quadrature, adaptive , finite interval, weight function $\cos(\omega x)$...	d01snc
	1-D quadrature, adaptive , finite interval, weight function with end-point ...	d01spc
	1-D quadrature, adaptive , finite interval, weight function $1/(x - c)$, ...	d01sqc
	1-D quadrature, adaptive , semi-infinite interval, weight function $\cos(\omega x)$...	d01ssc
	Multi-dimensional adaptive quadrature over hyper-rectangle	d01wcc
	Add a new variable to a general linear regression model	g02dec
	Add/delete an observation to/from a general linear ...	g02dcc
	Airy function Ai' (x)	s17ajc
	Airy function Ai (x)	s17agc
	Airy function Ai (x)	s17agc
	Airy function Bi (x)	s17ahc
	Airy function Ai' (x)	s17ajc
	Airy function Bi' (x)	s17akc
... weight function with end-point singularities of	algebraico-logarithmic type	d01spc
	Allocates observations to groups according to selected ...	g03dcc
	Allocates memory to transfer function model orders	g13byc
Multivariate time series, cross	amplitude spectrum, squared coherency, bounds, ...	g13cec
	Analysis of variance, randomized block or completely ...	g04bbc
	Analysis of variance, general row and column design, ...	g04bcc
	Analysis of variance, complete factorial design, ...	g04cac
Performs principal component	analysis	g03aac
Performs canonical variate	analysis	g03acc
Performs canonical correlation	analysis	g03adc
... likelihood estimates of the parameters of a factor	analysis model, factor loadings, communalities and ...	g03cac
... covariance matrices and matrices for discriminant	analysis	g03dac
	Hierarchical cluster analysis	g03ecc
	K -means cluster analysis	g03efc
Performs principal coordinate	analysis , classical metric scaling	g03fac
	Friedman two-way analysis of variance on k matched samples	g08aec
	Kruskal–Wallis one-way analysis of variance on k samples of unequal size	g08afc
	Approximation	e02
	Approximation of special functions	s
	arc tanh x	s11aac
	arc sinh x	s11abc
	arc cosh x	s11acc
Safe range of floating-point	arithmetic	X02AMC
Parameter of floating-point	arithmetic model, b	X02BHC
Parameter of floating-point	arithmetic model, p	X02BJC
Parameter of floating-point	arithmetic model, ϵ_{\min}	X02BKC
Parameter of floating-point	arithmetic model, ϵ_{\max}	X02BLC
Parameter of floating-point	arithmetic model, ROUNDS	X02DJC
	Legendre and associated Legendre functions of the first kind	s22aac
Univariate time series, sample	autocorrelation function	g13abc
Univariate time series, partial	autocorrelations from autocorrelations	g13acc
Least-squares cubic spline curve fit,	automatic knot placement	e02bec
Least-squares surface fit by bicubic splines with	automatic knot placement, data on rectangular grid	e02dcc
Least-squares surface fit by bicubic splines with	automatic knot placement, scattered data	e02ddc
Parameter of floating-point arithmetic model, b		X02BHC
	B-splines	e02
Matrix-vector product, real rectangular	band matrix (dgbmv)	f06pbc
Matrix-vector product, real symmetric	band matrix (dsbmv)	f06pdc
Matrix-vector product, real triangular	band matrix (dtbmv)	f06pgc
System of equations, real triangular	band matrix (dtbsv)	f06pkc
Matrix-vector product, complex rectangular	band matrix (zgbmv)	f06sbc
Matrix-vector product, complex Hermitian	band matrix (zgbmv)	f06sdc
Matrix-vector product, complex triangular	band matrix (ztbmv)	f06sgc
System of equations, complex triangular	band matrix (ztbmv)	f06skc
... of real symmetric positive-definite variable-	bandwidth matrix	f01mcc
Solution of real symmetric positive-definite variable-	bandwidth simultaneous linear equations (coefficient ...	f04mcc
	ODEs, stiff IVP, BDF method, until function of solution is zero, ...	d02ejc

Kelvin function bei x	s19abc
Kelvin function ber x	s19aac
Bessel function $Y_0(x)$	s17acc
Bessel function $Y_1(x)$	s17adc
Bessel function $J_0(x)$	s17aec
Bessel function $J_1(x)$	s17afc
Zeros of Bessel functions $J_\alpha(x)$, $J'_\alpha(x)$, $Y_\alpha(x)$ or $Y'_\alpha(x)$	s17alc
Modified Bessel function $K_0(x)$	s18acc
Modified Bessel function $K_1(x)$	s18adc
Modified Bessel function $I_0(x)$	s18aec
Modified Bessel function $I_1(x)$	s18afc
Modified Bessel function $e^x K_0(x)$	s18ccc
Modified Bessel function $e^x K_1(x)$	s18cdc
Modified Bessel function $e^{- x } I_0(x)$	s18cec
Modified Bessel function $e^{- x } I_1(x)$	s18cfc
Scaled modified Bessel function $e^{-x} I_{\nu/4}(x)$	s18ecc
Scaled modified Bessel function $e^x K_{\nu/4}(x)$	s18edc
Modified Bessel function $I_{\nu/4}(x)$	s18eec
Modified Bessel function $K_{\nu/4}(x)$	s18efc
Modified Bessel functions $K_{\alpha+n}(x)$ for real $x > 0$, selected values ...	s18egc
Scaled modified Bessel functions $e^x K_{\alpha+n}(x)$ for real $x > 0$...	s18ehc
Modified Bessel functions $I_{\alpha+n-1}(x)$ or $I_{\alpha-n+1}(x)$ for ...	s18ejc
Bessel functions $J_{\alpha+n-1}(x)$ or $J_{\alpha-n+1}(x)$ for real $x \neq 0, \dots$	s18ekc
... probability density function probabilities for the beta distribution	g01eec
Computes deviates for the beta distribution	g01fec
Computes probabilities for the non-central beta distribution	g01gac
Generates a vector of pseudo-random numbers from a beta distribution	g05fec
Airy function Bi' (x)	s17akc
Airy function Bi (x)	s17ahc
... unsymmetric linear system, RGMRES, CGS or Bi-CGSTAB method, preconditioner computed by ...	f11dcc
... unsymmetric linear system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner ...	f11dec
Interpolating functions, fitting bicubic spline, data on rectangular grid	e01dac
Least-squares surface fit by bicubic splines with automatic knot placement, data on ...	e02dcc
Least-squares surface fit by bicubic splines with automatic knot placement, ...	e02ddc
Evaluation of a fitted bicubic spline at a vector of points	e02dec
Evaluation of a fitted bicubic spline at a mesh of points	e02dfc
Binomial distribution function	g01bjc
Fits a generalized linear model with binomial errors	g02gbc
... vector for generating pseudo-random integers, binomial distribution	g05edc
Computes probability for the bivariate Normal distribution	g01hac
... squared coherency, bounds, univariate and bivariate (cross) spectra	g13cec
... time series, gain, phase, bounds, univariate and bivariate (cross) spectra	g13cfc
Analysis of variance, randomized block or completely randomized design, treatment ...	g04bbc
Integer programming problem, branch and bound method	h02bbc
ODEs, boundary value problem, finite difference technique ...	d02gac
ODEs, boundary value problem, finite difference technique ...	d02gbc
ODEs, general nonlinear boundary value problem, finite difference technique ...	d02rac
Bounded influence: See Robust	
... variables, quasi-Newton algorithm, simple bounds , using function values only	e04jbc
... variables, quasi-Newton algorithm, simple bounds , using 1st derivatives only	e04kbc
... variables, modified Newton algorithm, simple bounds , using 1st and 2nd derivatives (comprehensive)	e04lbc
... cross amplitude spectrum, squared coherency, bounds , univariate and bivariate (cross) spectra	g13cec
Multivariate time series, gain, phase, bounds , univariate and bivariate (cross) spectra	g13cfc
Multivariate time series, noise spectrum, bounds , impulse response function and its standard ...	g13cgc
... eigenvectors of real nonsymmetric matrix (Black Box)	f02ecc
... of complex nonsymmetric matrix (Black Box)	f02gcc
... method, preconditioner computed by f11jac (Black Box)	f11jcc
... method, Jacobi or SSOR preconditioner (Black Box)	f11jec
Integer programming problem, branch and bound method	h02bbc
... allowing for singularities at user-specified break-points	d01slc
Zero of continuous function in given interval, Bus and Dekker algorithm	c05sdc
Fresnel integral $C(x)$	s20adc
Performs canonical variate analysis	g03acc
Performs canonical correlation analysis	g03adc
... quadrature over hyper-rectangle, Monte Carlo method	d01xbc
... finite interval, weight function $1/(x-c)$, Cauchy principal value (Hilbert transform)	d01sqc
Computes probabilities for the non-central Student's t -distribution	g01gbc
Computes probabilities for the non-central χ^2 distribution	g01gcc
Computes probabilities for the non-central F -distribution	g01gdc
Computes probabilities for the non-central beta distribution	g01gec
... real sparse unsymmetric linear system, RGMRES, CGS or Bi-CGSTAB method, preconditioner computed ...	f11dcc

... real sparse unsymmetric linear system, RGMRES, CGS , or Bi-CGSTAB method, Jacobi or SSOR ...	f11dec
Evaluation of fitted polynomial in one variable from Chebyshev series form (simplified parameter list)	e02aec
Check user's function for calculating 1st derivatives	c05zcc
Check user's function for calculating 1st derivatives of ...	e04hcc
Check user's routine for calculating 2nd derivatives of ...	e04hdc
Check user's function for calculating Jacobian of 1st ...	e04yac
Univariate time series, diagnostic checking of residuals, following g13aec or g13afc	g13asc
Chi-squared statistics for two-way contingency table	g11aac
Computes probabilities for chi-squared distribution	g01ecc
Computes deviates for the chi-squared distribution	g01fcc
Computes probabilities for the non-central chi-squared distribution	g01gcc
Performs the chi-squared goodness of fit test, for standard continuous ...	g08cgc
Cholesky factorization: See Factorization	
Cosine integral Ci (x)	s13acc
Circular convolution or correlation of two real vectors	c06ekc
Performs principal coordinate analysis, classical metric scaling	g03fac
... polynomials or dummy variables for factor/ classification variable	g04eac
Computes multiway table from set of classification factors using selected statistic	g11bac
Computes multiway table from set of classification factors using given percentile/quantile	g11bbc
Interpolating functions, method of Renka and Cline , two dimensions	e01sac
... memory freeing function for use with Renka and Cline method	e01szc
Hierarchical cluster analysis	g03ecc
K-means cluster analysis	g03efc
Computes cluster indicator variable (for use after g03ecc)	g03ejc
Jacobian elliptic functions sn, cn and dn with complex argument	s21cbc
... positive-definite simultaneous linear equations (coefficient matrix already factorized by f03aec)	f04agc
Solution of real simultaneous linear equations (coefficient matrix already factorized by f03afc)	f04ajc
Solution of complex simultaneous linear equations (coefficient matrix already factorized by f03ahc)	f04akc
... positive-definite simultaneous linear equations (coefficient matrix already factorized by f01bnc)	f04awc
... variable-bandwidth simultaneous linear equations (coefficient matrix already factorized by f01mcc)	f04mcc
Zeros of a cubic polynomial with real coefficients	c02akc
Zeros of a quartic polynomial with real coefficients	c02alc
Initialization of trigonometric coefficients for FFTs	c06gzc
Computes factor score coefficients (for use after g03cac)	g03ccc
... time series, cross amplitude spectrum, squared coherency , bounds, univariate and bivariate (cross) ...	g13cec
Analysis of variance, general row and column design, treatment means and standard errors	g04bcc
Operations with orthogonal matrices, form columns of Q after factorization by f01qcc	f01qec
Operations with unitary matrices, form columns of Q after factorization by f01rcc	f01rec
... of a factor analysis model, factor loadings, communalities and residual correlations	g03cac
Complement of cumulative normal distribution ...	s15acc
Complement of error function erfc x	s15adc
Analysis of variance, complete factorial design, treatment means and ...	g04cac
Complex number from real and imaginary parts	a02bac
Complex number raised to an integer power	a02ddc
Complex number raised to real power	a02dec
Complex number raised to complex power	a02dfc
Complex logarithm	a02dgc
Complex exponential	a02dhc
Complex cosine	a02dkc
Complex conjugate of Hermitian sequence	c06gbc
Complex conjugate of complex sequence	c06gcc
Complex conjugate of multiple Hermitian sequences	c06gqc
Real part of a complex number	a02bbc
Imaginary part of a complex number	a02bcc
Addition of two complex numbers	a02cac
Subtraction of two complex numbers	a02cbc
Multiplication of two complex numbers	a02ccc
Quotient of two complex numbers	a02cdc
Negation of a complex number	a02cec
Conjugate of a complex number	a02cfc
Equality of two complex numbers	a02cgc
Inequality of two complex numbers	a02chc
Argument of a complex number	a02dac
Modulus of a complex number	a02dbc
Square root of a complex number	a02dcc
All zeros of complex polynomial, modified Laguerre method	c02afc
Single 1-D complex discrete Fourier transform	c06ecc
Multiple 1-D complex discrete Fourier transforms	c06frc
2-D complex discrete Fourier transform	c06fuc
Convert Hermitian sequences to general complex sequences	c06gsc
LL^H factorization of complex Hermitian positive-definite matrix	f01bnc

All eigenvalues of complex Hermitian matrix	f02awc
All eigenvalues and eigenvectors of complex Hermitian matrix	f02axc
SVD of complex matrix	f02xec
<i>LU</i> factorization and determinant of complex matrix	f03ahc
Solution of complex Hermitian positive-definite simultaneous linear ...	f04awc
Unconstrained minimum, pre- conditioned conjugate gradient algorithm, function of ...	e04dgc
Simple linear regression confidence intervals	g02cbc
Computes confidence intervals for differences between means ...	g04dbc
... in means between two Normal populations, confidence interval	g07cac
Conjugate of a complex number	a02cfc
Complex conjugate of Hermitian sequence	c06gbc
Complex conjugate of complex sequence	c06gcc
Complex conjugate of multiple Hermitian sequences	c06gqc
Unconstrained minimum, pre- conditioned conjugate gradient algorithm, function of several ...	e04dgc
Solution of real sparse symmetric linear system, conjugate gradient/Lanczos method, preconditioner/	f11jcc
Solution of real sparse symmetric linear system, conjugate gradient/Lanczos method, Jacobi or SSOR/	f11jec
Rank-1 update, complex rectangular matrix, conjugated vector (zgerc)	f06snc
Mathematical constants	x01
Machine constants	x02
Convex QP problem or linearly- constrained linear least-squares problem	e04ncc
... several variables, sequential QP method, nonlinear constraints , using function values and optionally 1st ...	e04ucc
Minimum of a sum of squares, nonlinear constraints , sequential QP method, using function ...	e04unc
... of a general linear regression model for given constraints	g02dkc
... of parameters of a general linear model for given constraints	g02gkc
χ^2 statistics for two-way contingency table	g11aac
... difference technique with deferred correction, continuation facility	d02rac
Zero of continuous function in given interval, Bus and Dekker ...	c05sdc
Performs the χ^2 goodness of fit test, for standard continuous distributions	g08cgc
Kalman filters, controller Hessenberg transformation	g13ewc
Convert Hermitian sequences to general complex ...	c06gsc
Convex QP problem or linearly- constrained linear ...	e04ncc
Circular convolution or correlation of two real vectors	c06ekc
... problem, finite difference technique with deferred correction , simple nonlinear problem	d02gac
... problem, finite difference technique with deferred correction , general linear problem	d02gbc
... problem, finite difference technique with deferred correction , continuation facility	d02rac
Circular convolution or correlation of two real vectors	c06ekc
Computes (optionally weighted) correlation and covariance matrices missing values	g02bxc
.../variance-covariance matrix from correlation /variance-covariance matrix computed ...	g02byc
Calculates a robust estimation of a correlation matrix, Huber's weight function	g02hkc
Performs canonical correlation analysis	g03adc
... model, factor loadings, communalities and residual correlations	g03cac
Largest permissible argument for sin and cos	X02AHC
cosh x	s10acc
arc cosh x	s11acc
Cosine integral $Ci(x)$	s13acc
Complex cosine	a02dkc
Discrete cosine transform	c06hbc
Discrete quarter-wave cosine transform	c06hdc
Covariance matrix for nonlinear least-squares problem	e04ycc
Computes (optionally weighted) correlation and covariance matrices	g02bxc
Computes partial correlation/variance- covariance matrix from correlation/variance-covariance ...	g02byc
...-covariance matrix from correlation/variance- covariance matrix computed by g02bxc	g02byc
Computes test statistic for equality of within-group covariance matrices and matrices for discriminant ...	g03dac
... squared distances for group or pooled variance- covariance matrices (for use after g03dac)	g03dbc
Kalman filters, square root, covariance , time varying	g13eac
Kalman filters, square root, covariance , time invariant	g13ebc
Fits Cox's proportional hazard model	g12bac
Multivariate time series, smoothed sample cross spectrum using spectral smoothing by the ...	g13cdc
... coherency, bounds, univariate and bivariate (cross) spectra	g13cec
Multivariate time series, cross amplitude spectrum, squared coherency, bounds, ...	g13cec
... gain, phase, bounds, univariate and bivariate (cross) spectra	g13cfc
Crout's method: See <i>LU</i> factorization	
Zeros of a cubic polynomial with real coefficients	c02akc
Interpolating functions, cubic spline interpolant, one variable	e01bac
... functions, monotonicity-preserving, piecewise cubic Hermite, one variable	e01bec
Least-squares curve cubic spline fit (including interpolation)	e02bac
Evaluation of fitted cubic spline, function only	e02bbc
Evaluation of fitted cubic spline, function and derivatives	e02bcc
Evaluation of fitted cubic spline, definite integral	e02bdc
Least-squares cubic spline curve fit, automatic knot placement	e02bec
Fit cubic smoothing spline, smoothing parameter given	g10abc

Fit cubic smoothing spline, smoothing parameter estimated	g10acc
Cumulative normal distribution function $P(x)$	s15abc
Set up reference vector from supplied cumulative distribution function or probability ...	g05exc
Complement of cumulative normal distribution function $Q(x)$	s15acc
Least-squares curve fit, by polynomials, arbitrary data points	e02adc
Least-squares curve cubic spline fit (including interpolation)	e02bac
Least-squares cubic spline curve fit, automatic knot placement	e02bec
... spectral smoothing by the trapezium frequency (Daniell) window	g13cbc
... spectral smoothing by the trapezium frequency (Daniell) window	g13cdc
Singular value decomposition : See SVD	
... value problem, finite difference technique with deferred correction, simple nonlinear problem	d02gac
... value problem, finite difference technique with deferred correction, general linear problem	d02gbc
... value problem, finite difference technique with deferred correction, continuation facility	d02rac
Interpolated values, interpolant computed by e01bec, definite integral, one variable	e01bhc
Evaluation of fitted cubic spline, definite integral	e02bdc
LL^H factorization of complex Hermitian positive- definite matrix	f01bnc
LDL^T factorization of real symmetric positive- definite variable-bandwidth matrix	f01mcc
... where A and B are symmetric and B is positive- definite	f02adc
... where A and B are symmetric and B is positive- definite	f02aec
... and determinant of real symmetric positive- definite matrix	f03aec
Solution of real symmetric positive- definite simultaneous linear equations (coefficient ...	f04agc
Solution of complex Hermitian positive- definite simultaneous linear equations (coefficient ...	f04awc
Solution of real symmetric positive- definite variable-bandwidth simultaneous linear ...	f04mcc
Degenerate symmetrised elliptic integral of 1st kind ...	s21bac
... of continuous function in given interval, Bus and Dekker algorithm	c05sdc
Delete a variable from a general linear regression model	g02dfc
Add/ delete an observation to/from a general linear ...	g02dcc
Constructs dendrogram (for use after g03ecc)	g03ehc
Free NAG allocated memory for the dendrogram array in g03ehc	g03xzc
Computes upper and lower tail and probability density function probabilities for the beta distribution	g01eec
Kernel density estimate using Gaussian kernel	g10bac
Derivative of the psi function $\psi(x)$	s14aec
Derivative of the psi function $\psi(z)$	s14afc
Minimum, function of one variable, using 1st derivative	e04bbc
... interpolant computed by e01bec, function and 1st derivative , one variable	e01bgc
Solution of system of nonlinear equations using 1st derivatives	c05ubc
Check user's function for calculating 1st derivatives	c05zcc
Evaluation of fitted cubic spline, function and derivatives	e02bcc
... algorithm, function of several variables using 1st derivatives	e04dgc
... -Newton and quasi-Newton algorithm using 1st derivatives	e04gbc
Check user's function for calculating 1st derivatives of function	e04hcc
Check user's routine for calculating 2nd derivatives of function	e04hdc
...-Newton algorithm, simple bounds, using 1st derivatives only	e04kbc
... algorithm, simple bounds, using 1st and 2nd derivatives (comprehensive)	e04lbc
... using function values and optionally 1st derivatives (comprehensive)	e04ucc
... method, using function values and optionally 1st derivatives (comprehensive)	e04unc
Check user's function for calculating Jacobian of 1st derivatives	e04yac
... randomized block or completely randomized design , treatment means and standard errors	g04bbc
Analysis of variance, general row and column design , treatment means and standard errors	g04bcc
Analysis of variance, complete factorial design , treatment means and standard errors	g04cac
LL^T factorization and determinant of real symmetric positive-definite matrix	f03aec
LU factorization and determinant of real matrix	f03afc
LU factorization and determinant of complex matrix	f03ahc
Computes deviates for the standard Normal distribution	g01fac
Computes deviates for Student's t -distribution	g01fbc
Computes deviates for the χ^2 distribution	g01fcc
Computes deviates for the F -distribution	g01fdc
Computes deviates for the beta distribution	g01fec
Computes deviates for the gamma distribution	g01ffc
Robust estimation, median, median absolute deviation , robust standard deviation	g07dac
... median absolute deviation, robust standard deviation	g07dac
DFT : See Discrete Fourier transform	
Univariate time series, diagnostic checking of residuals, following g13aec or g13afc	g13asc
ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc	d02pzc
ODEs, boundary value problem, finite difference technique with deferred correction, simple ...	d02gac
ODEs, boundary value problem, finite difference technique with deferred correction, general ...	d02gbc
... general nonlinear boundary value problem, finite difference technique with deferred correction, ...	d02rac
Computes t -test statistic for a difference in means between two Normal populations, ...	g07cac
Computes confidence intervals for differences between means computed by g04bbc or g04bcc	g04dbc
Computes confidence intervals for differences between means computed by g04bbc or g04bcc	g04dbc
Ordinary differential equations: See ODEs	

Estimate (using numerical differentiation) gradient and/or Hessian of a function	e04xac
Discrete sine transform	c06hac
Discrete cosine transform	c06hbc
Discrete quarter-wave sine transform	c06hcc
Discrete quarter-wave cosine transform	c06hdc
Single 1-D real discrete Fourier transform	c06eac
Single 1-D Hermitian discrete Fourier transform	c06ebc
Single 1-D complex discrete Fourier transform	c06ecc
Multiple 1-D real discrete Fourier transforms	c06fpc
Multiple 1-D Hermitian discrete Fourier transforms	c06fqc
Multiple 1-D complex discrete Fourier transforms	c06frc
2-D complex discrete Fourier transform	c06fuc
... within-group covariance matrices and matrices for discriminant analysis	g03dac
Computes distance matrix	g03eac
Computes Mahalanobis squared distances for group or pooled variance-covariance ...	g03dbc
Gaussian distribution : See Normal distribution	
Binomial distribution function	g01bjc
Poisson distribution function	g01bkc
Hypergeometric distribution function	g01blc
Inverse Normal distribution function	g01cec
Computes probabilities for the standard Normal distribution	g01eac
Computes probabilities for Student's <i>t</i> - distribution	g01ebc
Computes probabilities for χ^2 distribution	g01ecc
Computes probabilities for <i>F</i> - distribution	g01edc
... density function probabilities for the beta distribution	g01eec
Computes probabilities for the gamma distribution	g01efc
Computes deviates for the standard Normal distribution	g01fac
Computes deviates for Student's <i>t</i> - distribution	g01fbc
Computes deviates for the χ^2 distribution	g01fcc
Computes deviates for the <i>F</i> - distribution	g01fdc
Computes deviates for the beta distribution	g01fec
Computes deviates for the gamma distribution	g01ffc
... probabilities for the non-central Student's <i>t</i> - distribution	g01gbc
Computes probabilities for the non-central χ^2 distribution	g01gcc
Computes probabilities for the non-central <i>F</i> - distribution	g01gdc
Computes probabilities for the non-central beta distribution	g01gec
Computes probability for the bivariate Normal distribution	g01hac
Computes probabilities for the multivariate Normal distribution	g01hbc
Pseudo-random real numbers, uniform distribution over (0,1)	g05cac
Pseudo-random real numbers, uniform distribution over (<i>a</i> , <i>b</i>)	g05dac
Pseudo-random real numbers, (negative) exponential distribution	g05dbc
Pseudo-random real numbers, Normal distribution	g05ddc
Pseudo-random integer from uniform distribution	g05dyc
Set up reference vector for multivariate Normal distribution	g05eac
... for generating pseudo-random integers, Poisson distribution	g05ecc
... for generating pseudo-random integers, binomial distribution	g05edc
Set up reference vector from supplied cumulative distribution function or probability distribution function	g05exc
... a vector of pseudo-random numbers from a beta distribution	g05fec
... vector of pseudo-random numbers from a gamma distribution	g05ffc
Cumulative normal distribution function $P(x)$	s15abc
Complement of cumulative normal distribution function $Q(x)$	s15acc
Inverse distributions	g01
... one-sample Kolmogorov–Smirnov test for standard distributions	g08cbc
... χ^2 goodness of fit test, for standard continuous distributions	g08cgc
Jacobian elliptic functions sn, cn and dn with complex argument	s21cbc
... finite interval, strategy due to Piessens and de Doncker , allowing for badly-behaved integrands	d01sjc
Performs the runs up or runs down test for randomness	g08eac
All eigenvalues of generalized real eigenproblem of the form $Ax = \lambda Bx$ where <i>A</i> and <i>B</i> ...	f02adc
All eigenvalues and eigenvectors of generalized real eigenproblem of the form $Ax = \lambda Bx$ where <i>A</i> and <i>B</i> ...	f02aec
... and optionally eigenvectors of generalized eigenproblem by <i>QZ</i> algorithm, real matrices	f02bjc
All eigenvalues of real symmetric matrix	f02aac
All eigenvalues and eigenvectors of real symmetric matrix	f02abc
All eigenvalues of generalized real eigenproblem of the ...	f02adc
All eigenvalues and eigenvectors of generalized real ...	f02aec
All eigenvalues of real matrix	f02afc
All eigenvalues and eigenvectors of real matrix	f02agc
All eigenvalues of complex Hermitian matrix	f02awc
All eigenvalues and eigenvectors of complex Hermitian ...	f02axc
All eigenvalues and optionally eigenvectors of generalized ...	f02bjc
Selected eigenvalues and eigenvectors of real nonsymmetric ...	f02ecc
Selected eigenvalues and eigenvectors of complex nonsymmetric ...	f02gcc

All eigenvalues and eigenvectors of real symmetric matrix	f02abc
All eigenvalues and eigenvectors of generalized real eigenproblem of the ...	f02aec
All eigenvalues and eigenvectors of real matrix	f02agc
All eigenvalues and eigenvectors of complex Hermitian matrix	f02axc
All eigenvalues and optionally eigenvectors of generalized eigenproblem by QZ ...	f02bjc
Selected eigenvalues and eigenvectors of real nonsymmetric matrix (Black Box)	f02ecc
Selected eigenvalues and eigenvectors of complex nonsymmetric matrix (Black ...	f02gcc
Gaussian elimination : See LU factorization	
Elliptic integral of the second kind with complex ...	s21dac
Degenerate symmetrised elliptic integral of 1st kind $R_C(x, y)$	s21bac
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	Computes the maximum likelihood estimates of the parameters of a ...	g03cac
	Mean , variance, skewness, kurtosis etc, one variable, ...	g01aac
	Computes a trimmed and winsorized mean of a single sample with estimates of their ...	g07ddc
	<i>K</i> - means cluster analysis	g03efc
... block or completely randomized design, treatment	means and standard errors	g04bbc
... general row and column design, treatment	means and standard errors	g04bcc
... of variance, complete factorial design, treatment	means and standard errors	g04cac
Computes confidence intervals for differences between	means computed by g04bbc or g04bcc	g04dbc

Computes confidence intervals for differences between means computed by g04bbc or g04bcc	g04dbc
Computes <i>t</i> -test statistic for a difference in means between two Normal populations, confidence ...	g07cac
Median test on two samples of unequal size	g08acc
Computes a five-point summary (median , hinges and extremes)	g01alc
Robust estimation, median, median absolute deviation, robust standard deviation	g07dac
smoothed data sequence, using running median smoothers	g10cac
Computes Kaplan- Meier (product-limit) estimates of survival ...	g12aac
NAG memory freeing function for use with Runge-Kutta ...	d02ppc
NAG memory freeing function for use with Renka and Cline ...	e01szc
Free memory allocated by e04mzc	e04myc
NAG memory freeing function for use with option setting	e04xzc
Free NAG allocated memory for the dendrogram array in g03ehc	g03xzc
Frees NAG allocated memory to some parameters in g04cac	g04czc
Allocates memory to transfer function model orders	g13byc
NAG memory freeing function for the transfer function ...	g13bzc
NAG memory freeing function for use with option setting	g13xzc
Free memory allocated by h02buc	h02bvc
Free NAG allocated memory from option structures	h02xzc
Evaluation of a fitted bicubic spline at a mesh of points	e02dfc
Performs principal coordinate analysis, classical metric scaling	g03fac
Performs non- metric (ordinal) multidimensional scaling	g03fcc
... of function defined by data values, Gill- Miller method	d01gac
Minimization	e04
Minimum , function of one variable using function ...	e04abc
Minimum , function of one variable, using 1st derivative	e04bbc
Minimum , function of several variables, ...	e04jbc
Minimum , function of several variables, ...	e04kbc
Minimum , function of several variables, modified ...	e04lbc
Minimum , function of several variables, sequential QP ...	e04ucc
Minimum of a sum of squares, nonlinear constraints, ...	e04unc
Unconstrained minimum , simplex algorithm, function of several ...	e04ccc
Unconstrained minimum , pre-conditioned conjugate gradient ...	e04dgc
Unconstrained minimum of a sum of squares, combined Gauss-...	e04fcc
Unconstrained minimum of a sum of squares, combined Gauss-...	e04gbc
... linear regression with or without constant term missing values	g02cac
Smallest positive model number	X02AKC
Largest positive model number	X02ALC
Parameter of floating-point arithmetic model , <i>b</i>	X02BHC
Parameter of floating-point arithmetic model , <i>p</i>	X02BJC
Parameter of floating-point arithmetic model , e_{\min}	X02BKC
Parameter of floating-point arithmetic model , e_{\max}	X02BLC
Parameter of floating-point arithmetic model , ROUNDS	X02DJC
Fits a general (multiple) linear regression model	g02dac
... an observation to/from a general linear regression model	g02dcc
... of linear parameters and general linear regression model from updated model	g02ddc
Add a new variable to a general linear regression model	g02dec
Delete a variable from a general linear regression model	g02dfc
Fits a general linear regression model for new dependent variable	g02dgc
... errors of parameters of a general linear regression model for given constraints	g02dkc
... estimable function of a general linear regression model and its standard error	g02dnc
Fits a generalized linear model with Normal errors	g02gac
Fits a generalized linear model with binomial errors	g02gbc
Fits a generalized linear model with Poisson errors	g02gcc
Fits a generalized linear model with gamma errors	g02gdc
... standard errors of parameters of a general linear model for given constraints	g02gkc
Computes estimable function of a generalized linear model and its standard error	g02gnc
... estimates of the parameters of a factor analysis model , factor loadings, communalities and residual ...	g03cac
Fits Cox's proportional hazard model	g12bac
Multivariate time series, estimation of multi-input model	g13bec
... set and forecasts from fully specified multi-input model	g13bjc
Allocates memory to transfer function model orders	g13byc
Freeing function for the transfer function model orders structure	g13bzc
Modified Bessel function $K_0(x)$	s18acc
Modified Bessel function $K_1(x)$	s18adc
Modified Bessel function $I_0(x)$	s18aec
Modified Bessel function $I_1(x)$	s18afc
Modified Bessel function $e^x K_0(x)$	s18ccc
Modified Bessel function $e^x K_1(x)$	s18cdc
Modified Bessel function $e^{- x } I_0(x)$	s18cec
Modified Bessel function $e^{- x } I_1(x)$	s18cfc
Modified Bessel function $I_{\nu/4}(x)$	s18eec

	Modified Bessel function $K_{\nu/4}(x)$	s18efc
	Modified Bessel functions $K_{\alpha+n}(x)$ for real $x > 0$, ...	s18egc
	Modified Bessel functions $I_{\alpha+n-1}(x)$ or $I_{\alpha-n+1}(x)$ for ...	s18ejc
All zeros of complex polynomial,	modified Laguerre method	c02afc
All zeros of real polynomial,	modified Laguerre method	c02agc
Interpolating functions,	modified Shepard's method, two dimensions	e01sac
... of a sum of squares, combined Gauss–Newton and	modified Newton algorithm using function values only	e04fcc
Minimum, function of several variables,	modified Newton algorithm, simple bounds, using 1st ...	e04lbc
Scaled	modified Bessel function $e^{-x}I_{\nu/4}(x)$	s18ecc
Scaled	modified Bessel function $e^xK_{\nu/4}(x)$	s18edc
Scaled	modified Bessel functions $e^xK_{\alpha+n}(x)$ for real ...	s18ehc
Modulus of a complex number		a02dbc
Interpolating functions,	monotonicity-preserving , piecewise cubic Hermite, ...	e01bec
Multi-dimensional quadrature over hyper-rectangle,	Monte Carlo method	d01xbc
Read	MPSX data for sparse LP or QP problem from a file	e04mzc
Read	MPSX data for IP, LP or QP problem from a file	h02buc
	Multi-dimensional adaptive quadrature over ...	d01wcc
	Multi-dimensional quadrature over hyper-rectangle, ...	d01xbc
Multivariate time series, estimation of	multi-input model	g13bec
... state set and forecasts from fully specified	multi-input model	g13bjc
	Multiple 1-D real discrete Fourier transforms	c06fpc
	Multiple 1-D Hermitian discrete Fourier transforms	c06fqc
	Multiple 1-D complex discrete Fourier transforms	c06frc
Complex conjugate of	multiple Hermitian sequences	c06gqc
... of complex simultaneous linear equations with	multiple right-hand sides	f04adc
Solves a system of equations with	multiple right-hand sides, real triangular ... (dtrsm)	f06yjc
Solves a system of equations with	multiple right-hand sides, complex triangular ... (ztrsm)	f06zjc
Fits a general (multiple) linear regression model		g02dac
	Multiplication of two complex numbers	a02ccc
	Multivariate time series, estimation of multi-input ...	g13bec
	Multivariate time series, state set and forecasts from ...	g13bjc
	Multivariate time series, smoothed sample cross ...	g13cdc
	Multivariate time series, cross amplitude spectrum, ...	g13cec
	Multivariate time series, gain, phase, bounds, ...	g13cfc
	Multivariate time series, noise spectrum, bounds, ...	g13cgc
Computes probabilities for the	multivariate Normal distribution	g01hbc
Set up reference vector for	multivariate Normal distribution	g05eac
Pseudo-random	multivariate Normal vector from reference vector	g05ezc
Pseudo-random real numbers, (negative) exponential distribution		g05dbc
... minimum of a sum of squares, combined Gauss–Newton and modified Newton algorithm using function ...		e04fcc
... minimum of a sum of squares, combined Gauss–Newton and quasi-Newton algorithm using 1st ...		e04gbc
Minimum, function of several variables, quasi-Newton algorithm, simple bounds, using ...		e04jbc
Minimum, function of several variables, quasi-Newton algorithm, simple bounds, using 1st ...		e04kbc
Minimum, function of several variables, modified Newton algorithm, simple bounds, using 1st and 2nd ...		e04lbc
	NLP problem (sparse)	e04ugc
Multivariate time series,	noise spectrum, bounds, impulse response function and ...	g13cgc
Computes probabilities for the	non-central Student's t -distribution	g01gbc
Computes probabilities for the	non-central χ^2 distribution	g01gcc
Computes probabilities for the	non-central F -distribution	g01gdc
Computes probabilities for the	non-central beta distribution	g01gec
Performs	non-metric (ordinal) multidimensional scaling	g03fcc
Kendall/Spearman	non-parametric rank correlation coefficients, casewise ...	g02brc
Initialize random number generating functions to give	non-repeatable sequence	g05ccc
	Nonlinear optimization	e04
	Nonlinear regression	e04
Solution of system of	nonlinear equations using function values only	c05tbc
Solution of system of	nonlinear equations using 1st derivatives	c05ubc
... technique with deferred correction, simple	nonlinear problem	d02gac
ODEs, general	nonlinear boundary value problem, finite difference ...	d02rac
... of several variables, sequential QP method,	nonlinear constraints, using function values and ...	e04ucc
Minimum of a sum of squares,	nonlinear constraints, sequential QP method, using ...	e04unc
Covariance matrix for	nonlinear least-squares problem	e04ycc
Inverse	Normal distribution function	g01cec
Ranks, Normal scores, approximate	Normal scores or exponential (Savage) scores	g01dhc
Computes probabilities for the standard	Normal distribution	g01eac
Computes deviates for the standard	Normal distribution	g01fac
Computes probability for the bivariate	Normal distribution	g01hac
Computes probabilities for the multivariate	Normal distribution	g01hbc
Fits a generalized linear model with	Normal errors	g02gac
Pseudo-random real numbers,	Normal distribution	g05ddc
Set up reference vector for multivariate	Normal distribution	g05eac

Pseudo-random multivariate	Normal vector from reference vector	g05ezc
... statistic for a difference in means between two	Normal populations, confidence interval	g07cac
	Cumulative normal distribution function $P(x)$	s15abc
	Complement of cumulative normal distribution function $Q(x)$	s15acc
Shapiro and Wilk's W test for	Normality	g01ddc
	Numerical integration	d01
Estimate (using	numerical differentiation) gradient and/or Hessian of a ...	e04xac
Add/delete an	observation to/from a general linear regression model	g02dcc
Allocates	observations to groups according to selected rules (for ...	g03dcc
Reorder data to give ordered distinct	observations	g10zac
	Kalman filters, observer Hessenberg transformation	g13ewc
	ODEs , IVP, Adams method, until function of solution ...	d02cjc
	ODEs , stiff IVP, BDF method, until function of ...	d02ejc
	ODEs , boundary value problem, finite difference ...	d02gac
	ODEs , boundary value problem, finite difference ...	d02gbc
	ODEs , IVP, Runge–Kutta method, integration over ...	d02pcc
	ODEs , IVP, Runge–Kutta method, integration over ...	d02pdc
	ODEs , IVP, set-up for d02pcc and d02pdc	d02pvc
	ODEs , IVP, resets end of range for d02pdc	d02pwc
	ODEs , IVP, interpolation for d02pdc	d02pxc
	ODEs , IVP, error assessment diagnostics for d02pcc ...	d02pzc
	ODEs , IVP, Adams method with root-finding	d02qfc
	ODEs , IVP, set-up for d02qfc	d02qwc
	ODEs , IVP, freeing function for use with d02qfc	d02qyc
	ODEs , IVP, interpolation for d02qfc	d02qzc
Interpolating functions, cubic spline interpolant,	one variable	e01bac
... monotonicity-preserving, piecewise cubic Hermite,	one variable	e01bec
... interpolant computed by e01bec, function only,	one variable	e01bfc
... computed by e01bec, function and 1st derivative,	one variable	e01bgc
... interpolant computed by e01bec, definite integral,	one variable	e01bhc
Solution of real simultaneous linear equations,	one right-hand side	f04arc
Mean, variance, skewness, kurtosis etc,	one variable, from raw data	g01aac
Performs the Wilcoxon	one-sample (matched pairs) signed rank test	g08agc
Performs the	one-sample Kolmogorov–Smirnov test for standard ...	g08cbc
Kruskal–Wallis	one-way analysis of variance on k samples of unequal size	g08afc
	Operations with orthogonal matrices, compute QB or ...	f01qdc
	Operations with orthogonal matrices, form columns of ...	f01qec
	Operations with unitary matrices, compute QB or ...	f01rdc
	Operations with unitary matrices, form columns of Q ...	f01rec
	Nonlinear optimization	e04
Initialization function for Chapter e04	option setting	e04xxc
NAG memory freeing function for use with	option setting	e04zxc
Initialization function for Chapter g13	option setting	g13bxc
NAG memory freeing function for use with	option setting	g13zxc
	Initialize option structure to null values	h02xxc
	Read optional parameter values from a file	h02xyc
	Read options from a textfile	e04xyc
Reorder data to give	ordered distinct observations	g10zac
Performs non-metric (ordinal) multidimensional scaling		g03fcc
	Ordinary differential equations: See ODEs	
Operations with	orthogonal matrices, compute QB or $Q^T B$ after ...	f01qdc
Operations with	orthogonal matrices, form columns of Q after ...	f01qec
	Computes orthogonal rotations for loading matrix, generalized ...	g03bac
	Computes orthogonal polynomials or dummy variables for...	g04eac
... rotations for loading matrix, generalized	orthomax criterion	g03bac
... adaptive, finite interval, method suitable for	oscillating functions	d01skc
	Incomplete Gamma functions $P(a, x)$ and $Q(a, x)$	s14bac
Cumulative normal distribution function	$P(x)$	s15abc
Matrix-vector product, real symmetric	packed matrix (dspm v)	f06pec
Matrix-vector product, real triangular	packed matrix (dtpm v)	f06phc
System of equations, real triangular	packed matrix (dtpsv)	f06plc
Rank-1 update, real symmetric	packed matrix (dspr)	f06pqc
Rank-2 update, real symmetric	packed matrix (dspr2)	f06psc
Matrix-vector product, complex Hermitian	packed matrix (zhpm v)	f06sec
Matrix-vector product, complex triangular	packed matrix (ztpm v)	f06shc
System of equations, complex triangular	packed matrix (ztpsv)	f06slc
Rank-1 update, complex Hermitian	packed matrix (zhpr)	f06sqc
Rank-2 update, complex Hermitian	packed matrix (zhpr2)	f06ssc
	Sign test on two paired samples	g08aac
Performs the Wilcoxon one-sample (matched	pairs) signed rank test	g08agc
	Performs the pairs (serial) test for randomness	g08ebc

Kendall/Spearman non-	parametric rank correlation coefficients, casewise ...	g02brc
Computes	partial correlation/variance-covariance matrix from...	g02byc
Univariate time series,	partial autocorrelations from autocorrelations	g13acc
...from set of classification	factors using given	percentile/quantile
Pseudo-random	permutation of an integer vector	g11bbc
Multivariate time series, gain,	phase , bounds, univariate and bivariate (cross) spectra	g05ehc
	pi	g13cfc
Interpolating functions, monotonicity-preserving,	piecewise cubic Hermite, one variable	X01AAC
... adaptive, finite interval, strategy due to	Piessens and de Doncker, allowing for badly-behaved ...	e01bec
	Poisson distribution function	d01sjc
Fits a generalized linear model with	Poisson errors	g01bkc
... vector for generating pseudo-random integers,	Poisson distribution	g02gcc
All zeros of complex	polynomial , modified Laguerre method	g05ecc
All zeros of real	polynomial , modified Laguerre method	c02afc
Evaluation of fitted	polynomial in one variable from Chebyshev series form ...	c02agc
Least-squares	polynomial fit, special data points (including ...	e02aec
Least-squares curve fit, by	polynomials , arbitrary data points	e02afc
Computes orthogonal	polynomials or dummy variables for factor ...	e02adc
... Mahalanobis squared distances for group or	pooled variance-covariance matrices (for use after ...	g04eac
... for a difference in means between two Normal	populations , confidence interval	g03dbc
Machine	precision	g07cac
Unconstrained minimum,	preconditioned conjugate gradient algorithm, ...	X02AJC
... system, RGMRES, CGS or Bi-CGSTAB method,	preconditioner computed by f11dac (Black Box)	e04dgc
... CGS, or Bi-CGSTAB method, Jacobi or SSOR	preconditioner (Black Box)	f11dcc
Solution of linear system involving incomplete <i>LU</i>	preconditioning matrix generated by f11dac	f11dec
... of linear system involving incomplete Cholesky	preconditioning matrix generated by f11jac	f11dbc
... interval, weight function $1/(x - c)$, Cauchy	principal value (Hilbert transform)	f11jbc
Performs	principal component analysis	d01sqc
Performs	principal coordinate analysis, classical metric scaling	g03aac
Computes	probabilities for the standard Normal distribution	g03fac
Computes	probabilities for Student's <i>t</i> -distribution	g01eac
Computes	probabilities for χ^2 distribution	g01ebc
Computes	probabilities for <i>F</i> -distribution	g01ecc
... and lower tail and probability density function	probabilities for the beta distribution	g01edc
Computes	probabilities for the gamma distribution	g01eec
Computes	probabilities for the non-central Student's <i>t</i> -distribution	g01efc
Computes	probabilities for the non-central χ^2 distribution	g01gbc
Computes	probabilities for the non-central χ^2 distribution	g01gcc
Computes	probabilities for the non-central <i>F</i> -distribution	g01gdc
Computes	probabilities for the non-central beta distribution	g01gec
Computes	probabilities for the multivariate Normal distribution	g01hbc
... Kaplan-Meier (product-limit) estimates of survival	probabilities	g12aac
Computes upper and lower tail and	probability density function probabilities for the beta ...	g01eec
Computes	probability for the bivariate Normal distribution	g01hac
... from supplied cumulative distribution function or	probability distribution function	g05exc
Computes	Procrustes rotations	g03bcc
Matrix-vector	product , real rectangular matrix (dgemv)	f06pac
Matrix-vector	product , real rectangular band matrix (dgbmv)	f06pbc
Matrix-vector	product , real symmetric matrix (dsymv)	f06pcc
Matrix-vector	product , real symmetric band matrix (dsbmv)	f06pdc
Matrix-vector	product , real symmetric packed matrix (dspmv)	f06pec
Matrix-vector	product , real triangular matrix (dtrmv)	f06pfc
Matrix-vector	product , real triangular band matrix (dtbmv)	f06pgc
Matrix-vector	product , real triangular packed matrix (dtpmv)	f06phc
Matrix-vector	product , complex rectangular matrix (zgemv)	f06sac
Matrix-vector	product , complex rectangular band matrix (zgbmv)	f06sbc
Matrix-vector	product , complex Hermitian matrix (zhemv)	f06scc
Matrix-vector	product , complex Hermitian band matrix (zhibmv)	f06sdc
Matrix-vector	product , complex Hermitian packed matrix (zhpmv)	f06sec
Matrix-vector	product , complex triangular matrix (ztrmv)	f06sfc
Matrix-vector	product , complex triangular band matrix (ztbmv)	f06sgc
Matrix-vector	product , complex triangular packed matrix (ztpmv)	f06shc
Matrix-matrix	product , two real rectangular matrices (dgemm)	f06yac
Matrix-matrix	product , one real symmetric matrix, one real ... (dsymm)	f06ycc
Matrix-matrix	product , one real triangular matrix, one real ... (dtrmm)	f06yfc
Matrix-matrix	product , two complex rectangular matrices (zgemm)	f06zac
Matrix-matrix	product , one complex Hermitian matrix, one ... (zhemm)	f06zcc
Matrix-matrix	product , one complex triangular matrix, one ... (ztrmm)	f06zfc
Matrix-matrix	product , one complex symmetric matrix, one ... (zsymm)	f06ztc
Computes Kaplan-Meier (product-limit) estimates of survival probabilities		g12aac
Linear	programming problem	e04mfc
Quadratic	programming problem	e04nfc

Integer programming problem, branch and bound method	h02bbc
Fits Cox's proportional hazard model	g12bac
Pseudo-random real numbers, uniform distribution ...	g05cac
Pseudo-random real numbers, uniform distribution ...	g05dac
Pseudo-random real numbers, (negative) exponential ...	g05dbc
Pseudo-random real numbers, Normal distribution	g05ddc
Pseudo-random integer from uniform distribution	g05dyc
Pseudo-random permutation of an integer vector	g05ehc
Pseudo-random sample from an integer vector	g05ejc
Pseudo-random integer from reference vector	g05eyc
Pseudo-random multivariate Normal vector from ...	g05ezc
Set up reference vector for generating pseudo-random integers, Poisson distribution	g05ecc
Set up reference vector for generating pseudo-random integers, binomial distribution	g05edc
Generates a vector of pseudo-random numbers from a beta distribution	g05fec
Generates a vector of pseudo-random numbers from a gamma distribution	g05ffc
Derivative of the psi function $\psi(x)$	s14aec
Derivative of the psi function $\psi(z)$	s14afc
Incomplete Gamma functions $P(a, x)$ and $Q(a, x)$	s14bac
QP : See Quadratic programming	
Converts MPSX data file defining LP or QP problem to format required by e04nkc	e04mzc
Convex QP problem or linearly-constrained linear least-squares ...	e04ncc
LP or QP problem (sparse)	e04nkc
Minimum, function of several variables, sequential QP method, nonlinear constraints, using function ...	e04ucc
... a sum of squares, nonlinear constraints, sequential QP method, using function values and optionally 1st ...	e04unc
Read MPSX data for IP, LP or QP problem from a file	h02buc
QR factorization of real m by n matrix ($m \geq n$)	f01qcc
QR factorization of complex m by n matrix ($m \geq n$)	f01rcc
Quadratic programming problem	e04nfc
1-D quadrature , integration of function defined by data ...	d01gac
1-D quadrature , adaptive, finite interval, strategy due to ...	d01sjc
1-D quadrature , adaptive, finite interval, method suitable ...	d01skc
1-D quadrature , adaptive, finite interval, allowing for ...	d01slc
1-D quadrature , adaptive, infinite or semi-infinite interval	d01smc
1-D quadrature , adaptive, finite interval, weight function ...	d01snc
1-D quadrature , adaptive, finite interval, weight function ...	d01spc
1-D quadrature , adaptive, finite interval, weight function ...	d01sqc
1-D quadrature , adaptive, semi-infinite interval, weight ...	d01ssc
1-D Gaussian quadrature	d01tac
Multi-dimensional adaptive quadrature over hyper-rectangle	d01wcc
Multi-dimensional quadrature over hyper-rectangle, Monte Carlo method	d01xbc
...classification factors using given percentile/ quantile	g11bbc
Discrete quarter-wave sine transform	c06hcc
Discrete quarter-wave cosine transform	c06hdc
Zeros of a quartic polynomial with real coefficients	c02alc
... of a sum of squares, combined Gauss–Newton and quasi-Newton algorithm using 1st derivatives	e04gbc
Minimum, function of several variables, quasi-Newton algorithm, simple bounds, using ...	e04jbc
Minimum, function of several variables, quasi-Newton algorithm, simple bounds, using 1st ...	e04kbc
Quotient of two complex numbers	a02cdc
... of cumulative normal distribution function $Q(x)$	s15acc
... eigenvectors of generalized eigenproblem by QZ algorithm, real matrices	f02bjc
Pseudo-random real numbers, uniform distribution over (0,1)	g05cac
Initialize random number generating functions to give ...	g05cbc
Initialize random number generating functions to give non- ...	g05ccc
Save state of random number generating functions	g05cfc
Restore state of random number generating functions	g05cgc
Pseudo-random real numbers, uniform distribution over (a, b)	g05dac
Pseudo-random real numbers, (negative) exponential distribution	g05dbc
Pseudo-random real numbers, Normal distribution	g05ddc
Pseudo-random integer from uniform distribution	g05dyc
Set up reference vector for generating pseudo-random integers, Poisson distribution	g05ecc
Set up reference vector for generating pseudo-random integers, binomial distribution	g05edc
Pseudo-random permutation of an integer vector	g05ehc
Pseudo-random permutation of an integer vector	g05ehc
Pseudo-random sample from an integer vector	g05ejc
Pseudo-random sample from an integer vector	g05ejc
Pseudo-random integer from reference vector	g05eyc
Pseudo-random multivariate Normal vector from reference vector	g05ezc
Generates a vector of pseudo-random numbers from a beta distribution	g05fec
Generates a vector of pseudo-random numbers from a gamma distribution	g05ffc
Analysis of variance, randomized block or completely randomized design, treatment means and standard errors	g04bbc
Performs the runs up or runs down test for randomness	g08eac

Performs the pairs (serial) test for randomness	g08ebc
Performs the triplets test for randomness	g08ecc
Performs the gaps test for randomness	g08edc
Safe range of floating-point arithmetic	X02AMC
ODEs, IVP, Runge–Kutta method, integration over range with output	d02pcc
ODEs, IVP, resets end of range for d02pdc	d02pwc
The safe range parameter for complex floating-point arithmetic	x02anc
Kendall/Spearman non-parametric rank correlation coefficients, casewise treatment of ...	g02brc
... Wilcoxon one-sample (matched pairs) signed rank test	g08agc
Order a set of arbitrary objects (rank sort)	m01dsc
Rank-1 update, real rectangular matrix (dger)	f06pmc
Rank-1 update, real symmetric matrix (dsyrr)	f06ppc
Rank-1 update, real symmetric packed matrix (dspr)	f06pqc
Rank-1 update, complex rectangular matrix, ... (zgeru)	f06smc
Rank-1 update, complex rectangular matrix, ... (zgerc)	f06snc
Rank-1 update, complex Hermitian matrix (zher)	f06spc
Rank-1 update, complex Hermitian packed matrix (zhpr)	f06sqc
Rank-2 update, real symmetric matrix (dsyr2)	f06prc
Rank-2 update, real symmetric packed matrix (dspr2)	f06psc
Rank-2 update, complex Hermitian matrix (zher2)	f06src
Rank-2 update, complex Hermitian packed ... (zhpr2)	f06ssc
Rank-2k update of a real symmetric matrix (dsyr2k)	f06yrc
Rank-2k update of a complex Hermitian matrix (zher2k)	f06zrc
Rank-2k update of a complex symmetric matrix (zher2k)	f06zwc
Rank-k update of a real symmetric matrix (dsyrk)	f06ypc
Rank-k update of a complex Hermitian matrix (zherk)	f06zpc
Rank-k update of a complex symmetric matrix (zsyrk)	f06zuc
Ranks , Normal scores, approximate Normal scores or ...	g01dhc
Converts ranks to indices, or vice-versa	m01zac
Read MPSX data for sparse LP or QP problem from ...	e04mzc
Read MPSX data for IP, LP or QP problem from a file	h02buc
Read optional parameter values from a file	h02xyc
Rearrange a linked list into ascending or descending ...	m01cuc
Rearrange a set of arbitrary objects into an order ...	m01esc
Multi-dimensional adaptive quadrature over hyper- rectangle	d01wcc
Multi-dimensional quadrature over hyper- rectangle , Monte Carlo method	d01xbc
... functions, fitting bicubic spline, data on rectangular grid	e01dac
... splines with automatic knot placement, data on rectangular grid	e02dcc
Matrix-vector product, real rectangular matrix (dgemv)	f06pac
Matrix-vector product, real rectangular band matrix (dgbmv)	f06pbc
Rank-1 update, real rectangular matrix (dger)	f06pmc
Matrix-vector product, complex rectangular matrix (zgemv)	f06sac
Matrix-vector product, complex rectangular band matrix (zgbmv)	f06sbc
Rank-1 update, complex rectangular matrix, unconjugated vector (zgeru)	f06smc
Rank-1 update, complex rectangular matrix, conjugated vector (zgerc)	f06snc
Matrix-matrix product, two real rectangular matrices (dgemm)	f06yac
... real symmetric matrix, one real rectangular matrix (dsymm)	f06ycc
... one real triangular matrix, one real rectangular matrix (dtrmm)	f06yfc
Matrix-matrix product, two complex rectangular matrices (zgemm)	f06zac
... one complex Hermitian matrix, one complex rectangular matrix (zhemm)	f06zcc
... one complex triangular matrix, one complex rectangular matrix (ztrmm)	f06zfc
... one complex symmetric matrix, one complex rectangular matrix (zsymm)	f06ztc
Set up reference vector for multivariate Normal distribution	g05eac
Set up reference vector for generating pseudo-random ...	g05ecc
Set up reference vector for generating pseudo-random ...	g05edc
Set up reference vector from supplied cumulative distribution ...	g05exc
Pseudo-random integer from reference vector	g05eyc
Pseudo-random multivariate Normal vector from reference vector	g05ezc
reference vector for ARMA time series model with ...	g05hac
Nonlinear regression	e04
Simple linear regression with or without constant term, missing values	g02cac
Simple linear regression confidence intervals	g02cbc
Fits a general (multiple) linear regression model	g02dac
Add/delete an observation to/from a general linear regression model	g02dcc
Estimates of linear parameters and general linear regression model from updated model	g02ddc
Add a new variable to a general linear regression model	g02dec
Delete a variable from a general linear regression model	g02dfc
Fits a general linear regression model for new dependent variable	g02dgc
... standard errors of parameters of a general linear regression model for given constraints	g02dkc
Computes estimable function of a general linear regression model and its standard error	g02dnc
Robust regression , standard <i>M</i> -estimates	g02hac

- Interpolating functions, method of **Renka** and Cline, two dimensions e01sac
- NAG memory freeing function for use with **Renka** and Cline method e01szc
 - Reorder** data to give ordered distinct observations g10zac
- Real sparse unsymmetric matrix **reorder** routine f11zac
 - Real sparse symmetric matrix **reorder** routine f11zbc
 - ODEs, IVP, **resets** end of range for d02pdcf d02pwc
- ... analysis model, factor loadings, communalities and **residual** correlations g03cac
 - Calculates standardized **residuals** and influence statistics g02fac
- Univariate time series, diagnostic checking of **residuals**, following g13aec or g13afc g13asc
 - ... time series, noise spectrum, bounds, impulse **response** function and its standard error g13cgc
- Solution of real sparse unsymmetric linear system, **RGMRES**, CGS or Bi-CGSTAB method, ... f11dcc
 - Solution of real sparse unsymmetric linear system, **RGMRES**, CGS, or Bi-CGSTAB method, Jacobi or ... f11dec
 - ... simultaneous linear equations with multiple **right-hand** sides f04adc
- Solution of real simultaneous linear equations, one **right-hand** side f04arc
 - Solves a system of equations with multiple **right-hand** sides, real triangular coefficient ... (**dtrsm**) f06yjc
 - Solves a system of equations with multiple **right-hand** sides, complex triangular ... (**ztrsm**) f06zjc
 - Robust** regression, standard M -estimates g02hac
 - Robust** estimation, median, median absolute deviation, ... g07dac
 - Robust** estimation, M -estimates for location and scale ... g07dbc
 - Calculates a **robust** estimation of a correlation matrix, Huber's ... g02hkc
 - Square **root** of a complex number a02dcc
- ODEs, IVP, Adams method with **root-finding** d02qfc
 - Computes orthogonal **rotations** for loading matrix, generalized orthomax ... g03bac
 - Computes Procrustes **rotations** g03bcc
- ... observations to groups according to selected **rules** (for use after g03dac) g03dcc
 - ODEs, IVP, **Runge–Kutta** method, integration over range with ... d02pcc
 - ODEs, IVP, **Runge–Kutta** method, integration over one step d02pdc
- NAG memory freeing function for use with **Runge–Kutta** method d02ppc
 - smoothed data sequence, using **running** median smoothers g10cac
 - Performs the **runs** up or runs down test for randomness g08eac
 - Performs the runs up or **runs** down test for randomness g08eac
 - Safe** range of floating-point arithmetic X02AMC
 - Pseudo-random **sample** from an integer vector g05ejc
- Computes a trimmed and winsorized mean of a single **sample** with estimates of their variance g07ddc
 - Performs the Wilcoxon one-**sample** (matched pairs) signed rank test g08agc
 - Performs the one-**sample** Kolmogorov–Smirnov test for standard ... g08cbc
 - Performs the two-**sample** Kolmogorov–Smirnov test g08cdc
 - Univariate time series, **sample** autocorrelation function g13abc
 - Univariate time series, smoothed **sample** spectrum using spectral smoothing by the ... g13cbc
 - Multivariate time series, smoothed **sample** cross spectrum using spectral smoothing by the ... g13cdc
 - Sign test on two paired **samples** g08aac
 - Median test on two **samples** of unequal size g08acc
- Friedman two-way analysis of variance on k matched **samples** g08aec
 - Kruskal–Wallis one-way analysis of variance on k **samples** of unequal size g08afc
- ... scores, approximate Normal scores or exponential (**Savage**) scores g01dhc
 - Robust estimation, M -estimates for location and **scale** parameters, standard weight functions g07dbc
 - Scaled** modified Bessel function $e^{-x}I_{\nu/4}(x)$ s18ecc
 - Scaled** modified Bessel function $e^xK_{\nu/4}(x)$ s18edc
 - Scaled** modified Bessel functions $e^xK_{\alpha+n}(x)$ for real ... s18ehc
- ... principal coordinate analysis, classical metric **scaling** g03fac
 - Performs non-metric (ordinal) multidimensional **scaling** g03fcc
- ... by bicubic splines with automatic knot placement, **scattered** data e02ddc
 - Computes factor **score** coefficients (for use after g03cac) g03ccc
- Ranks, Normal scores, approximate Normal **scores** or exponential (Savage) scores g01dhc
 - Produces standardized values (z -**scores**) for a data matrix g03zac
 - Search** a set of arbitrary objects for first or last match m01fsc
 - Selected** eigenvalues and eigenvectors of real ... f02ecc
 - Selected** eigenvalues and eigenvectors of complex ... f02gcc
- Allocates observations to groups according to **selected** rules (for use after g03dac) g03dcc
 - Allocates observations to groups according to **selected** rules (for use after g03dac) g03dcc
- ... table from set of classification factors using **selected** statistic g11bac
 - 1-D quadrature, adaptive, infinite or **semi-infinite** interval d01smc
 - 1-D quadrature, adaptive, **semi-infinite** interval, weight function $\cos(\omega x)$... d01ssc
- Complex conjugate of Hermitian **sequence** c06gbc
 - Complex conjugate of complex **sequence** c06gcc
- ... number generating functions to give repeatable **sequence** g05cbc
 - ... generating functions to give non-repeatable **sequence** g05ccc
- Complex conjugate of multiple Hermitian **sequences** c06gqc
 - Convert Hermitian **sequences** to general complex sequences c06gsc
- Minimum, function of several variables, **sequential** QP method, nonlinear constraints, using ... e04ucc
- Minimum of a sum of squares, nonlinear constraints, **sequential** QP method, using function values and ... e04unc

	Performs the pairs (serial) test for randomness	g08ebc
	Shapiro and Wilk's W test for Normality	g01ddc
	Sign test on two paired samples	g08aac
Performs the Wilcoxon one-sample (matched pairs)	signed rank test	g08agc
	Unconstrained minimum, simplex algorithm, function of several variables using ...	e04ccc
	Solution of complex simultaneous linear equations with multiple ...	f04adc
Solution of real symmetric positive-definite	simultaneous linear equations (coefficient matrix ...	f04agc
	Solution of real simultaneous linear equations (coefficient matrix ...	f04ajc
	Solution of complex simultaneous linear equations (coefficient matrix ...	f04akc
	Solution of real simultaneous linear equations, one right-hand side	f04arc
Solution of complex Hermitian positive-definite	simultaneous linear equations (coefficient matrix ...	f04awc
... symmetric positive-definite variable-bandwidth	simultaneous linear equations (coefficient matrix ...	f04mcc
	Largest permissible argument for sin and cos	X02AHC
	Sine integral $Si(x)$	s13adc
	Complex sine	a02djc
	Discrete sine transform	c06hac
	Discrete quarter-wave sine transform	c06hcc
	Singular value decomposition: See SVD	
... quadrature, adaptive, finite interval, allowing for	singularities at user-specified break-points	d01slc
... finite interval, weight function with end-point	singularities of algebraico-logarithmic type	d01spc
	sinh x	s10abc
	arc sinh x	s11abc
	Mean, variance, skewness , kurtosis etc, one variable, from raw data	g01aac
	Smallest positive model number	X02AKC
Performs the one-sample Kolmogorov–	Smirnov test for standard distributions	g08cbc
Performs the two-sample Kolmogorov–	Smirnov test	g08cdc
	smoothed data sequence, using running median ...	g10cac
Univariate time series,	smoothed sample spectrum using spectral smoothing ...	g13cbc
Multivariate time series,	smoothed sample cross spectrum using spectral ...	g13cdc
smoothed data sequence, using running median	smoothers	g10cac
	Fit cubic smoothing spline, smoothing parameter given	g10abc
Fit cubic smoothing spline,	smoothing parameter given	g10abc
Fit cubic	smoothing spline, smoothing parameter estimated	g10acc
Fit cubic smoothing spline,	smoothing parameter estimated	g10acc
... series, smoothed sample spectrum using spectral	smoothing by the trapezium frequency (Daniell) window	g13cbc
... smoothed sample cross spectrum using spectral	smoothing by the trapezium frequency (Daniell) window	g13cdc
Jacobian elliptic functions	sn , cn and dn with complex argument	s21cbc
	Sort a set of real numbers (Quicksort)	m01cac
	Sort a set of arbitrary objects (Quicksort)	m01csc
	Sort a set of arbitrary objects (stable sort)	m01ctc
Sort a set of arbitrary objects (stable)	sort	m01ctc
... list into ascending or descending order (chain)	sort	m01cuc
Order a set of arbitrary objects (rank)	sort	m01dsc
	Real sparse unsymmetric linear systems, incomplete LU ...	f11dac
	Solution of real sparse unsymmetric linear system, RGMRES, CGS ...	f11dcc
	Solution of real sparse unsymmetric linear system, RGMRES, CGS ...	f11dec
	Real sparse symmetric matrix, incomplete Cholesky ...	f11jac
	Solution of real sparse symmetric linear system, conjugate ...	f11jcc
	Solution of real sparse symmetric linear system, conjugate ...	f11jec
	Real sparse unsymmetric matrix reorder routine	f11zac
	Real sparse symmetric matrix reorder routine	f11zbc
	Kendall/ Spearman non-parametric rank correlation coefficients, ...	g02brc
Least-squares polynomial fit,	special data points (including interpolation)	e02afc
Approximation of	special functions	s
... coherency, bounds, univariate and bivariate (cross)	spectra	g13cec
... phase, bounds, univariate and bivariate (cross)	spectra	g13cfc
... time series, smoothed sample spectrum using	spectral smoothing by the trapezium frequency ...	g13cbc
... time series, smoothed sample cross spectrum using	spectral smoothing by the trapezium frequency ...	g13cdc
Univariate time series, smoothed sample	spectrum using spectral smoothing by the trapezium ...	g13cbc
Multivariate time series, smoothed sample cross	spectrum using spectral smoothing by the trapezium ...	g13cdc
Multivariate time series, cross amplitude	spectrum , squared coherency, bounds, univariate and ...	g13cec
Multivariate time series, noise	spectrum , bounds, impulse response function and its ...	g13cgc
Interpolating functions, cubic	spline interpolant, one variable	e01bac
Interpolating functions, fitting bicubic	spline , data on ...	e01dac
Least-squares curve cubic	spline fit (including interpolation)	e02bac
Evaluation of fitted cubic	spline , function only	e02bbc
Evaluation of fitted cubic	spline , function and derivatives	e02bcc
Evaluation of fitted cubic	spline , definite integral	e02bdc
Least-squares cubic	spline curve fit, automatic knot placement	e02bec
Evaluation of a fitted bicubic	spline at a vector of points	e02dec
Evaluation of a fitted bicubic	spline at a mesh of points	e02dfc

Fit cubic smoothing spline , smoothing parameter given	g10abc
Fit cubic smoothing spline , smoothing parameter estimated	g10acc
Least-squares surface fit by bicubic splines with automatic knot placement, data on ...	e02dcc
Least-squares surface fit by bicubic splines with automatic knot placement, scattered data	e02ddc
B-splines	
Square root of a complex number	a02dcc
Kalman filters, square root, covariance, time varying	g13eac
Kalman filters, square root, covariance, time invariant	g13ebc
Kalman filters, square root, information, time varying	g13ecc
Kalman filters, square root, information, time invariant	g13edc
Computes Mahalanobis squared distances for group or pooled ...	g03dbc
Multivariate time series, cross amplitude spectrum, squared coherency, bounds, univariate and bivariate ...	g13cec
Least- squares curve fit, by polynomials, arbitrary data ...	e02adc
Least- squares polynomial fit, special data points (including ...)	e02afc
Least- squares curve cubic spline fit (including interpolation)	e02bac
Least- squares cubic spline curve fit, automatic knot placement	e02bec
Least- squares surface fit by bicubic splines with automatic ...	e02dcc
Least- squares surface fit by bicubic splines with automatic ...	e02ddc
Unconstrained minimum of a sum of squares , combined Gauss–Newton and modified ...	e04fcc
Unconstrained minimum of a sum of squares , combined Gauss–Newton and quasi-Newton ...	e04gbc
... QP problem or linearly-constrained linear least- squares problem	e04ncc
Minimum of a sum of squares , nonlinear constraints, sequential QP method, ...	e04unc
Covariance matrix for nonlinear least- squares problem	e04ycc
... CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box)	f11dec
... conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box)	f11jec
Computes probabilities for the standard Normal distribution	g01eac
Computes deviates for the standard Normal distribution	g01fac
Estimates and standard errors of parameters of a general linear ...	g02dkc
... of a general linear regression model and its standard error	g02dnc
Estimates and standard errors of parameters of a general linear model ...	g02gkc
... function of a generalized linear model and its standard error	g02gnc
Robust regression, standard M -estimates	g02hac
... randomized design, treatment means and standard errors	g04bbc
... row and column design, treatment means and standard errors	g04bcc
... complete factorial design, treatment means and standard errors	g04cac
... median, median absolute deviation, robust standard deviation	g07dac
... M -estimates for location and scale parameters, standard weight functions	g07dbc
... the one-sample Kolmogorov–Smirnov test for standard distributions	g08cbc
Performs the χ^2 goodness of fit test, for standard continuous distributions	g08cgc
... bounds, impulse response function and its standard error	g13cgc
Calculates standardized residuals and influence statistics	g02fac
Produces standardized values (z -scores) for a data matrix	g03zac
Computes test statistic for equality of within-group covariance ...	g03dac
Computes t -test statistic for a difference in means between two Normal ...	g07cac
...set of classification factors using selected statistic	g11bac
Calculates standardized residuals and influence statistics	g02fac
χ^2 statistics for two-way contingency table	g11aac
ODEs, stiff IVP, BDF method, until function of solution is ...	d02ejc
Computes probabilities for Student's t -distribution	g01ebc
Computes deviates for Student's t -distribution	g01fbc
Computes probabilities for the non-central Student's t -distribution	g01gbc
Unconstrained minimum of a sum of squares, combined Gauss–Newton and modified ...	e04fcc
Unconstrained minimum of a sum of squares, combined Gauss–Newton and ...	e04gbc
Minimum of a sum of squares, nonlinear constraints, sequential QP ...	e04unc
Computes a five-point summary (median, hinges and extremes)	g01alc
Summation of Series	c06
Least-squares surface fit by bicubic splines with automatic knot ...	e02dcc
Least-squares surface fit by bicubic splines with automatic knot ...	e02ddc
Computes Kaplan-Meier (product-limit) estimates of survival probabilities	g12aac
SVD of real matrix	f02wec
SVD of complex matrix	f02xec
Fresnel integral $S(x)$	s20acc
LDL^T factorization of real symmetric positive-definite variable-bandwidth matrix	f01mcc
All eigenvalues of real symmetric matrix	f02aac
All eigenvalues and eigenvectors of real symmetric matrix	f02abc
... of the form $Ax = \lambda Bx$ where A and B are symmetric and B is positive-definite	f02adc
... of the form $Ax = \lambda Bx$ where A and B are symmetric and B is positive-definite	f02aec
LL^T factorization and determinant of real symmetric positive-definite matrix	f03aec
Solution of real symmetric positive-definite simultaneous linear ...	f04agc
Solution of real symmetric positive-definite variable-bandwidth ...	f04mcc
Matrix-vector product, real symmetric matrix (dsymv)	f06pcc

Matrix-vector product, real symmetric band matrix (dsbmv)	f06pdc
Matrix-vector product, real symmetric packed matrix (dspmv)	f06pec
Rank-1 update, real symmetric matrix (dsyrr)	f06ppc
Rank-1 update, real symmetric packed matrix (dspr)	f06pqc
Rank-2 update, real symmetric matrix (dsyr2)	f06prc
Rank-2 update, real symmetric packed matrix (dspr2)	f06psc
Matrix-matrix product, one real symmetric matrix, one real rectangular matrix (dsymm)	f06ycc
Rank- <i>k</i> update of a real symmetric matrix (dsyrk)	f06ypc
Rank-2 <i>k</i> update of a real symmetric matrix (dsyr2k)	f06yrc
Matrix-matrix product, one complex symmetric matrix, one complex rectangular ... (zsymm)	f06ztc
Rank- <i>k</i> update of a complex symmetric matrix (zsyrk)	f06zuc
Rank-2 <i>k</i> update of a complex symmetric matrix (zher2k)	f06zwc
Real sparse symmetric matrix, incomplete Cholesky factorization	f11jac
Solution of real sparse symmetric linear system, conjugate gradient/Lanczos ...	f11jcc
Solution of real sparse symmetric linear system, conjugate gradient/Lanczos ...	f11jec
Real sparse symmetric matrix reorder routine	f11zbc
Symmetrised elliptic integral of 1st kind $R_F(x, y, z)$	s21bbc
Symmetrised elliptic integral of 2nd kind $R_D(x, y, z)$	s21bcc
Symmetrised elliptic integral of 3rd kind $R_J(x, y, z, r)$	s21bdc
Degenerate symmetrised elliptic integral of 1st kind $R_C(x, y)$	s21bac
System of equations, real triangular matrix (dtrsv)	f06pjc
System of equations, real triangular band matrix (dtbsv)	f06pkc
System of equations, real triangular packed ... (dtpsv)	f06plc
System of equations, complex triangular matrix (ztrsv)	f06sjc
System of equations, complex triangular ... (ztbsv)	f06skc
System of equations, complex triangular ... (ztpsv)	f06slc
Solution of system of nonlinear equations using function values only	c05tbc
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Solves a system of equations with multiple right-hand ... (dtrsm)	f06yjc
Solves a system of equations with multiple right-hand ... (ztrsm)	f06zjc
Solution of real sparse unsymmetric linear system , RGMRES, CGS or Bi-CGSTAB method, ...	f11dcc
Solution of real sparse unsymmetric linear system , RGMRES, CGS, or Bi-CGSTAB method, ...	f11dec
Solution of real sparse symmetric linear system , conjugate gradient/Lanczos method, /	f11jcc
Solution of real sparse symmetric linear system , conjugate gradient/Lanczos method, Jacobi or ...	f11jec
Real sparse unsymmetric linear systems , incomplete <i>LU</i> factorization	f11dac
Computes probabilities for Student's <i>t</i> -distribution	g01ebc
Computes deviates for Student's <i>t</i> -distribution	g01fbc
Computes probabilities for the non-central Student's <i>t</i> -distribution	g01gbc
Computes <i>t</i> -test statistic for a difference in means between ...	g07cac
Frequency table from raw data	g01aec
χ^2 statistics for two-way contingency table	g11aac
Computes multiway table from set of classification factors using selected ...	g11bac
Computes multiway table from set of classification factors using given ...	g11bbc
Computes marginal tables for multiway table computed by g11bac or g11bbc	g11bcc
Computes marginal tables for multiway table computed by g11bac or g11bbc	g11bcc
Computes marginal tables for multiway table computed by g11bac or g11bbc	g11bcc
Computes marginal tables for multiway table computed by g11bac or g11bbc	g11bcc
Computes upper and lower tail and probability density function probabilities for ...	g01eec
Complex tan	a02dlc
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arc tanh x	s11aac
Shapiro and Wilk's <i>W</i> test for Normality	g01ddc
Computes test statistic for equality of within-group covariance ...	g03dac
Computes <i>t</i> - test statistic for a difference in means between two ...	g07cac
Sign test on two paired samples	g08aac
Median test on two samples of unequal size	g08acc
... Wilcoxon one-sample (matched pairs) signed rank test	g08agc
Performs the one-sample Kolmogorov–Smirnov test for standard distributions	g08cbc
Performs the two-sample Kolmogorov–Smirnov test	g08cdc
Performs the χ^2 goodness of fit test , for standard continuous distributions	g08cgc
Performs the runs up or runs down test for randomness	g08eac
Performs the pairs (serial) test for randomness	g08ebc
Performs the triplets test for randomness	g08ecc
Performs the gaps test for randomness	g08edc
Jacobian theta functions with real arguments	s21ccc
reference vector for ARMA time series model with following terms generation	g05hac
Univariate time series, generate <i>n</i> terms of either a symmetric ...	g05hkc
Univariate time series, generate <i>n</i> terms of a GARCH process with ...	g05hlc
Univariate time series, generate <i>n</i> terms of an asymmetric Glasten ...	g05hmc
Univariate time series, sample autocorrelation function	g13abc
Univariate time series, partial autocorrelations from autocorrelations	g13acc

- Univariate **time** series, diagnostic checking of residuals,... g13asc
- Multivariate **time** series, estimation of multi-input model g13bec
- Multivariate **time** series, state set and forecasts from fully specified ... g13bjc
 - Univariate **time** series, smoothed sample spectrum using spectral ... g13cbc
 - Multivariate **time** series, smoothed sample cross spectrum using ... g13cdc
 - Multivariate **time** series, cross amplitude spectrum, squared ... g13cec
 - Multivariate **time** series, gain, phase, bounds, univariate and ... g13cfc
 - Multivariate **time** series, noise spectrum, bounds, impulse response ... g13cgc
- Kalman filters, square root, covariance, **time** varying g13eac
- Kalman filters, square root, covariance, **time** invariant g13ebc
- Kalman filters, square root, information, **time** varying g13ecc
- Kalman filters, square root, information, **time** invariant g13edc
 - Univariate **time** series, parameter estimation for either a symmetric ... g13fac
 - Univariate **time** series, forecast function for either a symmetric ... g13fbc
 - Univariate **time** series, parameter estimation for a GARCH process ... g13fcc
 - Univariate **time** series, forecast function for a GARCH process ... g13fdc
 - Univariate **time** series, parameter estimation for an asymmetric ... g13fec
 - Univariate **time** series, forecast function for an asymmetric ... g13ffc
- Allocates memory to **transfer** function model orders g13byc
- Freeing function for the **transfer** function model orders structure g13bzc
 - Fast Fourier **transform**: See Fourier transform
- Single 1-D real discrete Fourier **transform** c06eac
- Single 1-D Hermitian discrete Fourier **transform** c06ebc
- Single 1-D complex discrete Fourier **transform** c06ecc
- 2-D complex discrete Fourier **transform** c06fuc
- Discrete sine **transform** c06hac
- Discrete cosine **transform** c06hbc
- Discrete quarter-wave sine **transform** c06hcc
- Discrete quarter-wave cosine **transform** c06hdc
- ... $1/(x - c)$, Cauchy principal value (Hilbert **transform**) d01sqc
- Kalman filters, observer Hessenberg **transformation** g13ewc
- Kalman filters, controller Hessenberg **transformation** g13exc
- Multiple 1-D real discrete Fourier **transforms** c06fpc
- Multiple 1-D Hermitian discrete Fourier **transforms** c06fqc
- Multiple 1-D complex discrete Fourier **transforms** c06frc
- Transportation** problem h03abc
- ... sample spectrum using spectral smoothing by the **trapezium** frequency (Daniell) window g13cbc
- ... cross spectrum using spectral smoothing by the **trapezium** frequency (Daniell) window g13cdc
- Matrix-vector product, real **triangular** matrix (**dtrmv**) f06pfc
- Matrix-vector product, real **triangular** band matrix (**dtbmv**) f06pgc
- Matrix-vector product, real **triangular** packed matrix (**dtpmv**) f06phc
- System of equations, real **triangular** matrix (**dtrsv**) f06pjc
- System of equations, real **triangular** band matrix (**dtbsv**) f06pkc
- System of equations, real **triangular** packed matrix (**dtpsv**) f06plc
- Matrix-vector product, complex **triangular** matrix (**ztrmv**) f06sfc
- Matrix-vector product, complex **triangular** band matrix (**ztbmv**) f06sgc
- Matrix-vector product, complex **triangular** packed matrix (**ztpmv**) f06shc
- System of equations, complex **triangular** matrix (**ztrsv**) f06sjc
- System of equations, complex **triangular** band matrix (**ztbsv**) f06skc
- System of equations, complex **triangular** packed matrix (**ztpsv**) f06slc
- Matrix-matrix product, one real **triangular** matrix, one real rectangular matrix (**dtrmm**) f06yfc
- ... equations with multiple right-hand sides, real **triangular** coefficient matrix (**dtrsm**) f06yjc
- Matrix-matrix product, one complex **triangular** matrix, one complex rectangular ... (**ztrmm**) f06zfc
- ... equations with multiple right-hand sides, complex **triangular** coefficient matrix (**ztrsm**) f06zjc
- Computes a **trimmed** and winsorized mean of a single sample with ... g07ddc
- Performs the **triplets** test for randomness g08ecc
- Addition of **two** complex numbers a02cac
- Multiplication of **two** complex numbers a02ccc
- Quotient of **two** complex numbers a02cdc
- Equality of **two** complex numbers a02cgc
- Inequality of **two** complex numbers a02chc
- Circular convolution or correlation of **two** real vectors c06ekc
- Performs the **two-sample** Kolmogorov–Smirnov test g08cdc
- Friedman **two-way** analysis of variance on k matched samples g08aec
- χ^2 statistics for **two-way** contingency table g11aac
- Rank-1 update, complex rectangular matrix, **unconjugated** vector (**zgeru**) f06smc
- Unconstrained** minimum, simplex algorithm, function ... e04ccc
- Unconstrained** minimum, pre-conditioned conjugate ... e04dgc
- Unconstrained** minimum of a sum of squares, ... e04fcc
- Unconstrained** minimum of a sum of squares, ... e04gbc
- Switch for taking precautions to avoid **underflow** X02DAC

Pseudo-random real numbers, uniform distribution over (0,1)	g05cac
Pseudo-random real numbers, uniform distribution over (a, b)	g05dac
Pseudo-random integer from uniform distribution	g05dyc
Operations with unitary matrices, compute QB or $Q^H B$ after ...	f01rdc
Operations with unitary matrices, form columns of Q after ...	f01rec
Univariate time series, generate n terms of either ...	g05hkc
Univariate time series, generate n terms of a GARCH ...	g05h1c
Univariate time series, generate n terms of an ...	g05hmc
Univariate time series, sample autocorrelation function	g13abc
Univariate time series, partial autocorrelations from ...	g13acc
Univariate time series, diagnostic checking of residuals,...	g13asc
Univariate time series, smoothed sample spectrum ...	g13cbc
Univariate time series, parameter estimation for either ...	g13fac
Univariate time series, forecast function for either ...	g13fbc
Univariate time series, parameter estimation for a ...	g13fcc
Univariate time series, forecast function for a GARCH ...	g13fdc
Univariate time series, parameter estimation for an ...	g13fec
Univariate time series, forecast function for an ...	g13ffc
... amplitude spectrum, squared coherency, bounds, univariate and bivariate (cross) spectra	g13cec
Multivariate time series, gain, phase, bounds, univariate and bivariate (cross) spectra	g13cfc
Real sparse unsymmetric linear systems, incomplete LU ...	f11dac
Solution of real sparse unsymmetric linear system, RGMRES, CGS ...	f11dcc
Solution of real sparse unsymmetric linear system, RGMRES, CGS ...	f11dec
Real sparse unsymmetric matrix reorder routine	f11zac
... and general linear regression model from updated model	g02ddc
Computes upper and lower tail and probability density function ...	g01eec
... functions, cubic spline interpolant, one variable	e01bac
... piecewise cubic Hermite, one variable	e01bec
... computed by e01bec, function only, one variable	e01bfc
... by e01bec, function and 1st derivative, one variable	e01bgc
... computed by e01bec, definite integral, one variable	e01bhc
Mean, variance, skewness, kurtosis etc, one variable , from raw data	g01aac
Add a new variable to a general linear regression model	g02dec
Delete a variable from a general linear regression model	g02dfc
... general linear regression model for new dependent variable	g02dgc
... factorization of real symmetric positive-definite variable-bandwidth matrix	f01mcc
Solution of real symmetric positive-definite variable-bandwidth simultaneous linear equations ...	f04mcc
... conjugate gradient algorithm, function of several variables using 1st derivatives	e04dgc
Minimum, function of several variables , quasi-Newton algorithm, simple bounds, ...	e04jbc
Minimum, function of several variables , quasi-Newton algorithm, simple bounds, ...	e04kbc
Mean, variance , skewness, kurtosis etc, one variable, from ...	g01aac
Computes partial correlation/ variance -covariance matrix from correlation/variance-...	g02byc
... squared distances for group or pooled variance -covariance matrices (for use after g03dac)	g03dbc
Analysis of variance , randomized block or completely randomized ...	g04bbc
Analysis of variance , general row and column design, treatment ...	g04bcc
Analysis of variance , complete factorial design, treatment means ...	g04cac
... mean of a single sample with estimates of their variance	g07ddc
Friedman two-way analysis of variance on k matched samples	g08aec
Kruskal-Wallis one-way analysis of variance on k samples of unequal size	g08afc
Performs canonical variate analysis	g03acc
Evaluation of a fitted bicubic spline at a vector of points	e02dec
Set up reference vector for multivariate Normal distribution	g05eac
Set up reference vector for generating pseudo-random integers, Poisson ...	g05ecc
Set up reference vector for generating pseudo-random integers, binomial ...	g05edc
Pseudo-random permutation of an integer vector	g05ehc
Pseudo-random sample from an integer vector	g05ejc
Set up reference vector from supplied cumulative distribution function ...	g05exc
Pseudo-random integer from reference vector	g05eyc
Pseudo-random multivariate Normal vector from reference vector	g05ezc
Generates a vector of pseudo-random numbers from a beta ...	g05fec
Generates a vector of pseudo-random numbers from a gamma ...	g05ffc
reference vector for ARMA time series model with ...	g05hac
Circular convolution or correlation of two real vectors	c06ekc
Shapiro and Wilk's W test for Normality	g01ddc
Kruskal-Wallis one-way analysis of variance on k samples of ...	g08afc
1-D quadrature, adaptive, finite interval, weight function $\cos(\omega x)$ or $\sin(\omega x)$	d01snc
1-D quadrature, adaptive, finite interval, weight function with end-point singularities of ...	d01spc
1-D quadrature, adaptive, finite interval, weight function $1/(x - c)$, Cauchy principal value ...	d01sqc
1-D quadrature, adaptive, semi-infinite interval, weight function $\cos(\omega x)$ or $\sin(\omega x)$	d01ssc
... robust estimation of a correlation matrix, Huber's weight function	g02hkc
... for location and scale parameters, standard weight functions	g07dbc

Computes (optionally weighted) correlation and covariance matrices missing ...	g02bxc
Performs the Wilcoxon one-sample (matched pairs) signed rank test	g08agc
Shapiro and Wilk's W test for Normality	g01ddc
... smoothing by the trapezium frequency (Daniell) window	g13cbc
... smoothing by the trapezium frequency (Daniell) window	g13cdc
Computes a trimmed and winsorized mean of a single sample with estimates of ...	g07ddc
Zero of continuous function in given interval, ...	c05sdc
... IVP, Adams method, until function of solution is zero , intermediate output	d02cjc
... IVP, BDF method, until function of solution is zero , intermediate output (simple driver)	d02ejc
Zeros of a cubic polynomial with real coefficients	c02akc
Zeros of a quartic polynomial with real coefficients	c02alc
Zeros of Bessel functions $J_\alpha(x)$, $J'_\alpha(x)$, $Y_\alpha(x)$ or $Y'_\alpha(x)$	s17alc
All zeros of complex polynomial, modified Laguerre method	c02afc
All zeros of real polynomial, modified Laguerre method	c02agc