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
UDES, IVF, 1-D quadrature	adaptive finite interval strategy due to Piessens and	d01sic
1-D quadrature,	adaptive, finite interval, strategy due to ressens and	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,	$\mathbf{adaptive}, \mathrm{finite\ interval}, \mathrm{weight\ function\ with\ end-point\ }\dots$	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
Airy function	Add/delete an observation to/from a general linear $\Delta i'(x)$	gU2acc
Airy function	$\Delta \mathbf{i}(x)$	silajc
The function	Airy function $\operatorname{Ai}(x)$	s17agc
	Airy function $Bi(x)$	s17ahc
	Airy function $\operatorname{Ai'}(x)$	s17ajc
	Airy function $\operatorname{Bi}'(x)$	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 of completely	g04bbc
	Analysis of variance, general fow and column design,	g04bcc
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
Friedman two way	analysis, classical metric scaling	g03fac
Kruskal–Wallis one-way	analysis of variance on k samples of unequal size	g00aec
	Approximation	e02
	Approximation of special functions	S
	$\operatorname{arc} \tanh x$	s11aac
	$\operatorname{arc} \sinh x$	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, emax	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
Parameter of floating-point arithmetic model	b	
i diameter of housing point aritimete model,	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 (ZnDMV)	IU6SdC
System of equations, complex triangular	band matrix (ztbsy)	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,	d02eic

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 $e^{-x}I_{\mu/4}(x)$	s18ecc
Scaled modified	Bessel function $e^x K_{\mu/4}(x)$	s18edc
Modified	Bessel function $I_{\mu/4}(x)$	s18eec
Modified	Bessel function $K_{i,i,4}(x)$	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 $L_{\alpha+n-1}(x)$ or $L_{\alpha-n+1}(x)$ for	s18eic
inoumou	Bessel functions $J_{\alpha+n-1}(x)$ or $J_{\alpha-n+1}(x)$ for real $x \neq 0$	s18ekc
probability density function probabilities for the	beta distribution	g01eec
probability density function probabilities for the	beta distribution	g01000
Computes probabilities for the non-central	beta distribution	g01rec
Computes probabilities for the hon-central	beta distribution	g01g00
Airy function	Bi'(r)	glostec
Airy function	$\mathbf{Bi}(x)$	al7ahc
Any function	Di (<i>x</i>) Di CCSTAD method meson dition on computed by	siranc
unsymmetric linear system, RGMRES, CGS or	Di-CGSTAB method, preconditioner computed by	fildcc
unsymmetric nnear system, RGMRES, CGS, or	bioubie grline, date or restangular grid	illaec
Interpolating functions, fitting	bicubic spline, data on rectangular grid	euldac
Least-squares surface fit by	bicubic splines with automatic knot placement, data on	eu2acc
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)	e041bc
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-		-
Computes probabilities for the holi	-central F-distribution	g01gdc
Computes probabilities for the non-	-central \overline{F} -distribution -central beta distribution	g01gdc g01gec

real marco uncommetria linear custom PCMPES	CCS or D: CCSTAP method Jacobi or SSOP	flldoo
real sparse unsymmetric linear system, RGMRES,	CGS, of DI-CGSTAD method, Jacobi of SSOR	illaec
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	e0/hdc
	Check user's fourne for calculating 2nd derivatives of	eoquiac
	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	abi gauged distribution	
Computes deviates for the	chi-squared distribution	guirce
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	$\mathbf{Ci}(x)$	s13acc
Cosine integrai	C(x)	SIJacc
	Circular convolution or correlation of two real vectors	сорекс
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	aloggification factors using given percentile (quentile	g11bbb
Computes multiway table from set of	classification factors using given percentile/quantile	giibbc
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
	aluaton indicaton maniphle (for was after moleces)	-02
Computes	ciuster indicator variable (lor use after gusecc)	guaejc
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)	f04aic
Solution of complex simultaneous linear equations (coefficient matrix already factorized by f03abc)	fOlakc
bolution of complex simultaneous intear equations ((Coefficient matrix arready factorized by fosaile)	IUTARC
postive-definite simultaneous linear equations (coefficient matrix already factorized by f01bnc)	104awc
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	acofficients for EETs	002010
		CUOgzc
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 f01acc	f01gec
Operations with orthogonal matrices, form	columns of Q after factorization by folgee	101400
Operations with unitary matrices, form	columns of Q after factorization by forrec	TOTLec
of a factor analysis model, factor loadings,	communalities and residual correlations	g03cac
	Complement of cumulative normal distribution	s15acc
	Complement of error function $\operatorname{erfc} x$	s15adc
Analysis of variance	complete factorial design treatment means and	o04cac
Thatysis of variance,	Complete factorial design, treatment means and	- 001
	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	202dac
		auzuge
	Complex exponential	a02dhc
	Complex cosine	a02dkc
	Complex conjugate of Hermitian sequence	c06gbc
	Complex conjugate of complex sequence	c06ecc
	Complex conjugate of multiple Hormitian accurace	c06~~-
	Complex conjugate of multiple Hermitian sequences	coogqc
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	a02000
Multiplication of two		auzuuu
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	-0- a02chc
A mequality of two	complex number	a02010
Argument of a	complex number	au2dac
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
	complex discrete Fourier transforms	-06f
Multiple 1-D	complex discrete Fourier transforms	CUDITC
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
LU factorization and determinant of	complex matrix	f03ahc
Solution of	complex Hermitian postive-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
Compley	conjugate of Hermitian sequence	c06gbc
Complex	conjugate of complex sequence	coogue
Complex	conjugate of complex sequence	coogec
Unconstrained minimum and conditioned	conjugate of multiple Hermitian sequences	coogqc
Unconstrained minimum, pre-conditioned	conjugate gradient algorithm, function of several	e04agc
Solution of real sparse symmetric linear system,	conjugate gradient/Lanczos method, preconditioner/	flijco
Solution of real sparse symmetric linear system,	conjugate gradient/Lanczos method, Jacobi or SSOR/	TIIJec
Rank-1 update, complex rectangular matrix,	conjugated vector (zgerc)	106snc
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 varving	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
Grand and a started and strained and straine	Crout's method: See LU factorization	0
Zeros of a	cubic polynomial with real coefficients	c02akc
Interpolating functions	cubic spline interpolant, one variable	e01hac
functions monotonicity-preserving piecewise	cubic Hermite, one variable	e01hec
Least_square curve	cubic spline fit (including interpolation)	e02hac
Evolution of fitted	cubic spline function only	annh
Evaluation of fitted	cubic spline, function and derivatives	e02bcc
Evaluation of fitted	cubic spline, function and derivatives	_002000
Lesst scueros	cubic spline, ucume fit automatic knot placement	e02bdc
Deast-squares	cubic spine curve ne, automatic knot placement	allopha
Fit	casic smoothing spine, smoothing parameter given	groand

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 $O(x)$	e15acc
Compensative normalize instantiation tunction $Q(x)$	SIDACC
Least-squares curve nt, by polynomials, arbitrary data points	euzadc
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
spectral shoothing by the trapentation requestly (Dancer with the Cor CVD)	BIOCUC
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
In tamb protocolin, intervalent computed by collabor definite interval contraction many	a01hha
interpolated values, interpolant computed by eorbec, definite integral, one valuable	eoibnc
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 D are symmetric and D is positive demine	TUZAUC
where A and B are symmetric and B is positive-definite	102aec
and determinant of real symmetric positive- definite matrix	f03aec
Solution of real symmetric positive- definite simultaneous linear equations (coefficient	f04agc
Solution of complex Hermitian postive-definite simultaneous linear equations (coefficient	f04awc
Solution of non-impacting positive definite similations include equations (contract	f04mee
Solution of real symmetric positive-definite variable-bandwidth simultaneous linear	104mcc
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	σ02dfc
Add/delate on shows tion to from a mount linear	-004
Add/delete an observation to/from a general linear	guzacc
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
Konnel density actimate using Causing lowed	g01000
Kerner densty estimate using Gaussian kerner	giubac
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	o01bgc
a interpose of provide the second and the derivative, one variable	eoinge
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
Northen and euse Norther algorithm using 1st derivatives	-04-h-
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 let and 2nd derivatives (comprehensive)	o041hc
algorithm, simple bounds, using is and and derivatives (comprehensive)	COTIDC
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	σ04bbc
Analysis of unioned comparison and column design, treatment means and standard emerg	~04haa
Analysis of variance, general tow and column design, treatment means and standard errors	go4bcc
Analysis of variance, complete factorial design , treatment means and standard errors \overline{T}	g04cac
LL^{T} factorization and determinant of real symmetric positive-definite matrix	f03aec
LU factorization and determinant of real matrix	f03afc
III factorization and determinant of complex matrix	f03ahc
Computer devictors for the standard Neurol distribution	-01f
computes deviates for the standard Normal distribution	guirac
Computes deviates for Student's <i>t</i> -distribution	g01fbc
Computes deviates for the χ^2 distribution	g01fcc
Computes deviates for the <i>E</i> -distribution	g01fdc
Computes deviates for the hete distribution	~01foo
Computes deviates for the beta distribution	goirec
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	-
\mathbf{D} is not photon from the formation of the formation \mathbf{D} is the set of the formation \mathbf{D} is the set of the following of the set of the s	m12
Onvariate time series, ungnostic checking of residuals, following g13aec or g13alc	groasc
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
Computed total total deliver in the uniformatical in the second s	-07
Computes t-test statistic for a unreference in means between two Normal populations,	guicac
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 guarter-wave cosine transform	c06hdc
Single 1-D real discrete Fourier transform	c06eac
Single LD Hermitian discrete Fourier transform	c06ebc
Single 1-D normalian discrete Fourier transform	000000
Single 1-D complex discrete Fourier transform	CUbecc
Multiple 1-D real discrete Fourier transforms	собірс
Multiple I-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	0
Binomial distribution function	σ01hic
Division distribution function	g01blc
Poisson distribution function	goibec
Hypergeometric distribution function	guibic
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
Computer devises for the standard Normal distribution	m01fac
Computes deviates for Student's + distribution	g01fbc
Computes deviates for student s t -distribution	goiibe
Computes deviates for the χ distribution	guirce
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
Broudo random real numbers, uniform distribution over (0.1)	g0Ecac
P_{result} is a product real numbers, uniform distribution over $(0,1)$	goocac
F seudo-fandom fear numbers, uniform distribution over (u, b)	gubuac
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
$C_{\rm unit}$ distribution function $P(r)$	a15abc
Complement of surgeristics control distribution function $O(x)$	-15
Complement of cumulative normal distribution function $Q(x)$	sibacc
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 \mathbf{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 A and B	f02adc
All eigenvalues and eigenvectors of generalized real eigenproblem of the form $Ar = \lambda Br$ where A and B	f02aec
and optionally eigenvectors of generalized algorithm by ΩZ algorithm real matrices	fOrhic
and optionally eigenvectors of generalized eigenvectors of your automatics	1020JC
All circumstance is a symmetric matrix	rozaac
An eigenvalues and eigenvectors of real symmetric matrix	TUZADC
All eigenvalues of generalized real eigenproblem of the	102adc
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	f02bic
Selected eigenvalues and eigenvectors of real nonsymmetric	f02ecc
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Selected airconvolues and airconvectors of complex nonsummetric	f02~~~

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$ \begin{array}{c} \mbox{Gaussian elimination: See } LU \mbox{ factorization} \\ \mbox{Elliptic integral of the second kind with complex} \\ \mbox{Degenerate symmetrised elliptic integral of 1st kind } R_C(x,y) \\ \mbox{Symmetrised elliptic integral of 1st kind } R_F(x,y,z) \\ \mbox{Symmetrised elliptic integral of 2nd kind } R_D(x,y,z) \\ \mbox{Symmetrised elliptic integral of 3rd kind } R_J(x,y,z,r) \\ \mbox{Jacobian elliptic functions sn, cn and dn with complex argume} \\ \mbox{ adaptive, finite interval, weight function with end-point singularities of algebraico-logarithmic type \\ \mbox{System of equations, real triangular matrix (dtrsv)} \\ \mbox{System of equations, real triangular matrix (dtpsv)} \\ \mbox{System of equations, complex triangular matrix (ztrsv)} \\ \mbox{System of equations, complex triangular band matrix (ztrsv)} \\ \mbox{System of equations, complex triangular packed matrix (ztrsv)} \\ \mbox{System of equations, with multiple right-hand sides, (dtrsm)} \\ \mbox{Solves a system of equations with multiple right-hand sides, (ztrsm)} \\ \mbox{Error function erf } x \\ \mbox{ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc} \\ \mbox{ a general linear regression model and its standard error} \\ \mbox{ impulse response function and its standard error} \\ \mbox{ complement of error function erfc } x \\ \mbox{Complement of error function erfc } x \\ \mbox{Extended and its standard error} \\ \mbox{ a translate a cod creater of a mean of a second linear procession \\ \mbox{ a translate area or a standard error} \\ \mbox{ a translate aregression model and its standard error} \\ a translate ar$	s21dac s21bac s21bbc s21bbc s21bbc s21bbc s21bbc f06pjc f06pjc f06pjc f06pjc f06sjc f06sjc f06slc f06sjc f06sjc f06sjc g02gcc g02gcc g02gcc g13gcc
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	s21dac s21bac s21bbc s21bbc s21bbc s21bbc s21bbc f06pjc f06pjc f06pkc f06plc f06sjc f06slc f06slc f06sjc f06sjc g02pcc g02pcc g02pcc
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$ \begin{array}{c} \text{Jacobian elliptic functions of a limit \mathcal{M}(x,y,y,r) \\ \text{Jacobian elliptic functions sn, cn and dn with complex argume} \\ adaptive, finite interval, weight function with end-point singularities of algebraico-logarithmic type \\ & System of equations, real triangular matrix (dtrsv) \\ & System of equations, real triangular band matrix (dtpsv) \\ & System of equations, real triangular packed matrix (dtpsv) \\ & System of equations, complex triangular matrix (ztrsv) \\ & System of equations, complex triangular band matrix (ztpsv) \\ & System of equations, complex triangular packed matrix (ztpsv) \\ & System of equations, complex triangular packed matrix (ztpsv) \\ & System of equations, complex triangular packed matrix (ztpsv) \\ & System of equations, complex triangular packed matrix (ztpsv) \\ & System of equations with multiple right-hand sides, (dtrsm) \\ & Solves a system of equations with multiple right-hand sides, (ztrsm) \\ & Error function erf x \\ & ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc \\ a general linear regression model and its standard error \\ of a generalized linear model and its standard error \\ of a generalized linear model and its standard error \\ a dot and dot $	nt s21cbc d01spc f06pjc f06pkc f06sjc f06sjc f06sjc f06sjc f06sjc f06sjc g02gc g02dc g02gc g02gc g13cc
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System of equations, complex triangular hard matrix $(ztbsv)$ System of equations, complex triangular band matrix $(ztbsv)$ System of equations, complex triangular packed matrix $(ztbsv)$ Solves a system of equations with multiple right-hand sides, $(dtrsm)$ Solves a system of equations with multiple right-hand sides, $(dtrsm)$ Error function erf x ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc a general linear regression model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function erfc x Extimates and standard error function erfc x	f06skc f06slc f06yjc f06zjc s15aec d02pzc g02dnc g02gnc g13cc
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Solves a system of equations, complex triangular picture matrix (Lept Solves a system of equations with multiple right-hand sides, (dtrsm) Solves a system of equations with multiple right-hand sides, (ztrsm) Error function $\operatorname{erf} x$ ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc a general linear regression model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function $\operatorname{erfc} x$ Extimates and standard error of a general linear regression	f06yjc f06zjc s15aec d02pzc g02dnc g02gnc g13cgc
Solves a system of equations with multiple right hand sides, (ztrsm) Error function erf x ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc a general linear regression model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function erfc x Extimates and standard errors of a general linear regression	f06zjc s15aec d02pzc g02dnc g02gnc
Error functions with multiple right hand sides, (200m) Error function erf $xODEs$, IVP, error assessment diagnostics for d02pcc and d02pdc a general linear regression model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function erfc x Extinue for a general linear regression	s15aec d02pzc g02dnc g02gnc g13cgc
ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc a general linear regression model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function erfc x Estimates and standard errors of a general linear regression	d02pzc g02dnc g02gnc g13cgc
a general linear regression model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function erfc x Estimates and standard error	g02dnc g02gnc g13cgc
of a generalized linear model and its standard error of a generalized linear model and its standard error impulse response function and its standard error Complement of error function erfc x Estimates and standard errors of a general linear regression	g02gnc g13cgc
of a generalized linear induct and its standard error impulse response function and its standard error Complement of error function $\operatorname{erfc} x$ Estimates and standard errors of a general linear regression	guzgiic g13cgc
Impulse response function and its statutiate error f includes x . Complement of error function $erfc x$.	p
Estimates and standard arrange of assumptions of a general linear regression	6100g0
	=00dla
Estimates and standard errors of parameters of a general mear regression	g02akc
Fits a generalized linear model with binorial emore	g02gac
Fits a generalized linear model with Diomai errors	g02gbc
Fits a generalized linear model with Poisson errors	g02gcc
Fits a generalized linear model with gamma errors	guzgac
Estimates and standard errors of parameters of a general linear model for	g02gkc
	g04bbc
and column design, treatment means and standard errors	g04bcc
lactorial design, treatment means and standard errors	g04cac
Computes estimable function of a general mear regression mod	g02dnc
Computes estimate function of a generalized linear model and	g02gnc
Konnel density estimate using found in lengel	e04xac
Refiner density estimate using Gaussian Kenner	giobac
Estimates of mean parameters and general mean	g02ddc
Estimates and standard errors of parameters of a	g02akc
Italia estimates and standard errors of parameters of a	g02gkc
Huber estimates: See Robust	
Robust regression, standard <i>M</i> -estimates	gu2nac
Computes the maximum likelihood estimates of the parameters of a factor analysis mod	1 00
Robust estimation, <i>M</i> -estimates for location and scale parameters, standar	l, g03cac
and minimum advector of a simple second with the first first in the	l, g03cac g07dbc
and winsorized mean of a single sample with estimates of their variance	el, g03cac g07dbc g07ddc
and winsorized mean of a single sample with estimates of their variance Computes Kaplan-Meier (product-limit) estimates of survival probabilities	el, g03cac g07dbc g07ddc g12aac
and winsorized mean of a single sample with estimates of their variance Computes Kaplan-Meier (product-limit) estimates of survival probabilities Calculates a robust estimation of a correlation matrix, Huber's weight	l, g03cac g07dbc g07ddc g12aac g02hkc
and winsorized mean of a single sample with estimates of their variance Computes Kaplan-Meier (product-limit) estimates of survival probabilities Calculates a robust estimation of a correlation matrix, Huber's weight Robust estimation , median, median absolute deviation, robu	el, g03cac g07dbc g07ddc g12aac g02hkc st g07dac
and winsorized mean of a single sample with estimates of their variance Computes Kaplan-Meier (product-limit) estimates of survival probabilities Calculates a robust estimation of a correlation matrix, Huber's weight Robust estimation , median, median absolute deviation, robu Robust estimation , <i>M</i> -estimates for location and scale	el, g03cac g07dbc g07ddc g12aac g02hkc st g07dac g07dac
and winsorized mean of a single sample with estimates of their variance Computes Kaplan-Meier (product-limit) estimates of survival probabilities Calculates a robust estimation of a correlation matrix, Huber's weight Robust estimation , median, median absolute deviation, robu Robust estimation , <i>M</i> -estimates for location and scale Multivariate time series, estimation of multi-input model	el, g03cac g07dbc g07ddc g12aac g02hkc st g07dac g07dbc g13bec g13bec
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ \mbox{ Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \mbox{ Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \mbox{ Robust estimation, median, median absolute deviation, robu} \\ \mbox{ Robust estimation, M-estimates for location and scale} \\ \mbox{ Multivariate time series, estimation of multi-input model} \\ \mbox{ Euler's constant, } \gamma \\ \mbox{ Intermediate bed} \end{array}$	el, g03cac g07dbc g12aac g02hkc st g07dac g07dbc g13bec X01ABC
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ \mbox{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \mbox{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \mbox{Robust estimation, median, median absolute deviation, robu} \\ \mbox{Robust estimation, M-estimates for location and scale} \\ \mbox{Multivariate time series, estimation of multi-input model} \\ \mbox{Euler's constant, } \gamma \\ \mbox{Interpolated values, evaluate interpolant computed by e01sac, two dimen} \end{array}$	el, g03cac g07dbc g07ddc g12aac g02hkc st g07dac g07dbc g13bec X01ABC ions e01sbc
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ Computes Kaplan-Meier (product-limit) estimates of survival probabilities \\ Calculates a robust estimation of a correlation matrix, Huber's weight \\ Robust estimation, median, median absolute deviation, robu \\ Robust estimation, M-estimates for location and scale \\ Multivariate time series, estimation of multi-input model \\ Euler's constant, \gamma \\ Interpolated values, evaluate interpolant computed by e01sac, two dimen \\ Evaluation of fitted polynomial in one variable from \\ \hline \end{array}$	el, g03cac g07dbc g07dbc g02dbc g02hbc g02hbc g07dbc g13bec X01ABC e01sbc e02aec
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ Computes Kaplan-Meier (product-limit) estimates of survival probabilities \\ Calculates a robust estimation of a correlation matrix, Huber's weight \\ Robust estimation, median, median absolute deviation, robu \\ Robust estimation, M-estimates for location and scale \\ Multivariate time series, estimation of multi-input model \\ Euler's constant, \gamma \\ Interpolated values, evaluate interpolant computed by e01sac, two dimen \\ Evaluation of fitted polynomial in one variable from \\ Evaluation of fitted cubic spline, function only \\ Evaluation of fitted cubic spline, function only \\ \end{array}$	el, g03cac g07dbc g07dbc g02dbc g02hbc g02hbc g07dbc g13bec X01ABC ions e01sbc e02aec e02bbc
$\begin{array}{c} \dots \text{ and winsorized mean of a single sample with estimates of their variance} \\ \text{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \text{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \text{Robust estimation, median, median absolute deviation, robu} \\ \text{Robust estimation, M-estimates for location and scale} \\ \dots \\ \text{Multivariate time series, estimation of multi-input model} \\ \text{Euler's constant, } \gamma \\ \text{Interpolated values, evaluate interpolant computed by e01sac, two dimen} \\ \text{Evaluation of fitted polynomial in one variable from} \\ \text{Evaluation of fitted cubic spline, function and deriva} \\ \text{Frabutian of fitted cubic spline, function and deriva} \\ \end{array}$	el, g03cac g07dbc g07dbc g12aac g02hkc st g07dac g07dbc g13bec X01ABC ions e01sbc e02acc e02bbc
$\begin{array}{c} \dots \text{ and winsorized mean of a single sample with estimates of their variance} \\ \text{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \text{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \text{Robust estimation, median, median absolute deviation, robu} \\ \text{Robust estimation, M-estimates for location and scale} \\ \dots \\ \text{Multivariate time series, estimation of multi-input model} \\ \text{Euler's constant, } \gamma \\ \text{Interpolated values, evaluate interpolant computed by e01sac, two dimen} \\ \text{Evaluation of fitted cubic spline, function only} \\ \text{Evaluation of fitted cubic spline, function only} \\ \text{Evaluation of fitted cubic spline, function and deriva} \\ \text{Evaluation of fitted cubic spline, definite integral} \\ Evaluat$	el, g03cac g07dbc g07dbc g07ddc g02hkc st g07dac g07dbc g13bcc X01ABC ions e01sbc e02acc e02bbc sives e02bcc
$ \begin{array}{c} \dots \text{ and winsorized mean of a single sample with estimates of their variance} \\ \text{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \text{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \dots \\ \text{Robust estimation, median, median absolute deviation, robu} \\ \text{Robust estimation, M-estimates for location and scale} \\ \dots \\ \text{Multivariate time series, estimation of multi-input model} \\ \text{Euler's constant, } \gamma \\ Interpolated values, evaluate interpolant computed by e01sac, two diment \\ \text{Evaluation of fitted polynomial in one variable from \\ \text{Evaluation of fitted cubic spline, function and derive \\ \text{Evaluation of fitted cubic spline, function and derive \\ \text{Evaluation of fitted cubic spline, at a vector of polynomial in a state of polynomial in the state of polynomial in the state of the spline integral \\ \text{Evaluation of fitted bicubic spline at a vector of polynomial in the spline at a vector of polynomial in the spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spline spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spline spline spline at a vector of polynomial in the spline spline spline at a vector of polynomial in the spline spline at a vector of polynomial in the spline spli$	el, g03cac g07dbc g07dbc g07ddc g02hkc st g07dac g07dbc g13bcc X01ABC ions e01sbc e02aec e02bbc cives e02bcc e02bdc ints e02dcc
$ \begin{array}{c} \dots \text{ and winsorized mean of a single sample with estimates of their variance} \\ \text{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \text{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \text{Robust estimation, median, median absolute deviation, robu} \\ \text{Robust estimation, M-estimates for location and scale} \\ \text{Multivariate time series, estimation of multi-input model} \\ \text{Euler's constant, } \gamma \\ Interpolated values, evaluate interpolant computed by e01sac, two dimenter evaluation of fitted polynomial in one variable from evaluation of fitted cubic spline, function and derived evaluation of fitted cubic spline, function and derived evaluation of a fitted bicubic spline at a vector of preventer bit (model) is (model) \\ \text{Evaluation of a fitted bicubic spline at a mesh of potential sector of the sector o$	el, g03cac g07dbc g07dbc g07dbc g02hkc g02hkc g07dbc g07dbc g13bcc X01ABC ions e01sbc e02acc e02bbc ives e02bcc e02bdc ints e02dfc
$ \begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ \mbox{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \mbox{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \mbox{Robust estimation, median, median absolute deviation, robu} \\ \mbox{Robust estimation, M-estimates for location and scale} \\ \mbox{Multivariate time series, estimation of multi-input model} \\ \mbox{Euler's constant, } \gamma \\ Interpolated values, evaluate interpolant computed by e01sac, two dimenses in the series of fitted polynomial in one variable from \\ \mbox{Evaluation of fitted cubic spline, function and derivate evaluation of fitted cubic spline, function and derivate \\ \mbox{Evaluation of a fitted bicubic spline at a vector of prevaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \\ \$	el, g03cac g07dbc g07dbc g07dbc g02hkc g02hkc g07dbc g07dbc g13bcc X01ABC ions e01sbc e02acc e02bbc cives e02bcc e02bdc ints e02dcc s13aac
and winsorized mean of a single sample with estimates of their variance Computes Kaplan-Meier (product-limit) estimates of survival probabilities Calculates a robust estimation of a correlation matrix, Huber's weight Robust estimation, median, median absolute deviation, robu Robust estimation, M -estimates for location and scale Multivariate time series, estimation of multi-input model Euler's constant, γ Interpolated values, evaluate interpolant computed by e01sac, two dimen Evaluation of fitted polynomial in one variable from Evaluation of fitted cubic spline, function only Evaluation of fitted cubic spline, function and deriva Evaluation of fitted cubic spline, definite integral Evaluation of a fitted bicubic spline at a vector of pr Evaluation of a fitted bicubic spline at a mesh of po Exponential integral $E_1(x)$ Complex exponential	el, g03cac g07dbc g07dbc g07dbc g02hkc g02hkc g07dbc g07dbc g13bec X01ABC ions e01sbc e02acc e02bbc e02bbc cives e02bcc e02bdc ints e02dcc s13aac a02dhc
$ \begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ \mbox{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \mbox{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \mbox{Robust estimation, median, median absolute deviation, robu} \\ \mbox{Robust estimation, M-estimates for location and scale} \\ \mbox{Multivariate time series, estimation of multi-input model} \\ \mbox{Euler's constant, } \gamma \\ \mbox{Interpolated values, evaluate interpolant computed by e01sac, two dimen} \\ \mbox{Evaluation of fitted polynomial in one variable from} \\ \mbox{Evaluation of fitted cubic spline, function and deriva} \\ \mbox{Evaluation of fitted cubic spline, definite integral} \\ Evaluation of a fitted bicubic spline at a vector of prevaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a me$	el, g03cac g07dbc g07dbc g07ddc g12aac g02hkc g13bcc x01ABC ions e01sbc e02acc e02bbc e02bbc cives e02bcc e02bbc s13aac a02dfc s13aac a02dfc
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ Computes Kaplan-Meier (product-limit) estimates of survival probabilities \\ Calculates a robust estimation of a correlation matrix, Huber's weight \\ Robust estimation, median, median absolute deviation, robu \\ Robust estimation, M-estimates for location and scale \\ Multivariate time series, estimation of multi-input model \\ Euler's constant, \gamma \\ Interpolated values, evaluate interpolant computed by e01sac, two dimen \\ Evaluation of fitted polynomial in one variable from \\ Evaluation of fitted cubic spline, function only \\ Evaluation of fitted cubic spline, function and deriva \\ Evaluation of fitted bicubic spline at a vector of prevaluation of a fitted bicubic spline at a mesh of po \\ Exponential integral E_1(x) \\ Complex exponential integral E_1(x) \\ Ranks, Normal scores, approximate Normal scores or exponential (Savage) scores \\ Pseudo-random real numbers, (negative) exponential distribution \\ \end{array}$	el, g03cac g07dbc g07dbc g07ddc g12aac g02hkc g13bec X01ABC ions e01sbc e02aec e02bbc cives e02bcc e02bdc ints e02dcc s13aac a02dhc g01dhc g05dbc
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ \mbox{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \mbox{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \mbox{Robust estimation, median, median absolute deviation, robu} \\ \mbox{Robust estimation, M-estimates for location and scale} \\ \mbox{Multivariate time series, estimation of multi-input model} \\ \mbox{Euler's constant, } \gamma \\ \mbox{Interpolated values, evaluate interpolant computed by e01sac, two dimen} \\ \mbox{Evaluation of fitted polynomial in one variable from} \\ \mbox{Evaluation of fitted cubic spline, function and deriva} \\ \mbox{Evaluation of fitted cubic spline, definite integral} \\ \mbox{Evaluation of a fitted bicubic spline at a vector of prevaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Evaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Exponential integral } E_1(x) \\ \mbox{Complex exponential} \\ \mbox{Ranks, Normal scores, approximate Normal scores or exponential (Savage) scores \\ \mbox{Pseudo-random real numbers, (negative) exponential distribution \\ \mbox{Computes a five-point summary (median, hinges and extremes)} \\ \end{tabular}$	el, g03cac g07dbc g07dbc g07dbc g02hkc g02hkc g07dbc g07dbc g07dbc g07dbc g07dbc g07dbc g07dbc e02bbc e02bbc e02bbc e02bbc e02bbc s13aac a02dbc g01dbc g01dbc
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ \mbox{Computes Kaplan-Meier (product-limit) estimates of survival probabilities} \\ \mbox{Calculates a robust estimation of a correlation matrix, Huber's weight} \\ \mbox{Robust estimation, median, median absolute deviation, robu} \\ \mbox{Robust estimation, M-estimates for location and scale} \\ \mbox{Multivariate time series, estimation of multi-input model} \\ \mbox{Euler's constant, } \gamma \\ \mbox{Interpolated values, evaluate interpolant computed by e01sac, two dimen evaluation of fitted polynomial in one variable from \\ \mbox{Evaluation of fitted cubic spline, function and deriva evaluation of fitted cubic spline, definite integral evaluation of a fitted bicubic spline at a vector of prevaluation of a fitted bicubic spline at a mesh of po \\ \mbox{Exponential integral } E_1(x) \\ \mbox{Complex exponential} \\ \mbox{Ranks, Normal scores, approximate Normal scores or exponential (Savage) scores} \\ \mbox{Pseudo-random real numbers, (negative) exponential distribution} \\ \mbox{Computes probabilities for } F-distribution \\ Computes probabilities for$	el, g03cac g07dbc g07dbc g07dbc g02hkc g02hkc g07dbc g07dbc g07dbc g07dbc g07dbc g07dbc g07dbc e02bbc e02bbc e02bbc e02bbc e02bbc s13aac a02dbc g01dbc g01dbc g01dbc
$\begin{array}{c} \mbox{ and winsorized mean of a single sample with estimates of their variance} \\ Computes Kaplan-Meier (product-limit) estimates of survival probabilities \\ Calculates a robust estimation of a correlation matrix, Huber's weight Robust estimation, median, median absolute deviation, robu Robust estimation, M-estimates for location and scale Multivariate time series, estimation of multi-input model Euler's constant, \gammaInterpolated values, evaluate interpolant computed by e01sac, two dimenEvaluation of fitted polynomial in one variable fromEvaluation of fitted cubic spline, function and derivaEvaluation of fitted cubic spline, function and derivaEvaluation of a fitted bicubic spline at a vector of prevaluation of a fitted bicubic spline at a mesh of poEvaluation of a fitted bicubic spline at $	el, g03cac g07dbc g07dbc g07dbc g02hkc g02hkc g07dbc g07dbc g07dbc g07dbc g07dbc g07dbc g07dbc e02bbc e02bbc e02bbc e02bbc e02bbc s13aac a02dbc g01dbc g01dbc g01dbc

likelihood estimates of the parameters of a	factor analysis model, factor loadings, communalities	g03cac
Computes	factor score coefficients (for use after g03cac)	g03ccc
polynomials or dummy variables for	factor/classification_variable	g04eac
Analysis of variance complete	factorial design treatment means and standard errors	g04cac
Cholesky	factorization: See Factorization	Boreac
Crout's method, See IU	factorization	
Coursian alimination. See LU		
Gaussian emmation: See LU		6041
	factorization of complex Hermitian positive-definite	f01bnc
	factorization of real symmetric positive-definite	f01mcc
QR	factorization of real m by n matrix $(m \ge n)$	f01qcc
matrices, compute QB or $Q^{I}B$ after	factorization by f01qcc	f01qdc
\dots with orthogonal matrices, form columns of Q after	factorization by f01qcc	f01qec
QR	factorization of complex m by n matrix $(m \ge n)$	f01rcc
unitary matrices, compute QB or $Q^H B$ after	factorization by f01rcc	f01rdc
\ldots with unitary matrices, form columns of Q after	factorization by f01rcc	f01rec
LL^T	factorization and determinant of real symmetric	f03aec
LU	factorization and determinant of real matrix	f03afc
LU	factorization and determinant of complex matrix	f03ahc
\dots sparse unsymmetric linear systems, incomplete LU	factorization	f11dac
Real sparse symmetric matrix, incomplete Cholesky	factorization	f11jac
	Failures	p01
	Fast Fourier transform: See Fourier transform	-
	FFT : See Fourier transform	
1-D quadrature, adaptive.	finite interval, strategy due to Piessens and de Doncker.	d01sic
1-D quadrature, adaptive	finite interval, method suitable for oscillating functions	d01skc
1-D quadrature, adaptive	finite interval, allowing for singularities at user-specified	d01slc
1-D quadrature, adaptive	finite interval, weight function $\cos(\omega r)$ or $\sin(\omega r)$	d01snc
1-D quadrature, adaptive,	finite interval, weight function with end-point	d01enc
1 D quadrature, adaptive,	finite interval, weight function $1/(x - a)$ Cauchy	dolage
ODEs houndary value problem	Exite difference technicus with deferred correction simple.	400
ODEs, boundary value problem,	finite difference technique with deferred correction, simple	duzgac
ODEs, boundary value problem,	finite difference technique with deferred correction, general	d02gbc
ODEs, general nonlinear boundary value problem,	Thite difference technique with deferred correction,	d02rac
	Fit cubic smoothing spline, smoothing parameter given	gluabc
T I	Fit cubic smoothing spline, smoothing parameter estimated	gluacc
Least-squares curve	ht , by polynomials, arbitrary data points	e02adc
Least-squares polynomial	fit, special data points (including interpolation)	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 knot placement,	e02dcc
Least-squares surface	fit by bicubic splines with automatic knot placement,	e02ddc
Performs the χ^2 goodness of	fit test, for standard continuous distributions	g08cgc
	Fits a general (multiple) linear regression model	g02dac
	Fits a general linear regression model for new	g02dgc
	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
	Fits Cox's proportional hazard model	g12bac
Evaluation of	fitted polynomial in one variable from Chebyshev series	e02aec
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
Evaluation of a	fitted bicubic spline at a vector of points	e02dec
Evaluation of a	fitted bicubic spline at a mesh of points	e02dfc
Interpolating functions	fitting bicubic spline data on rectangular grid	e01dac
Computes a	five-point summary (median binges and extremes)	of 1alc
Safe range of	floating-point arithmetic	X024MC
Parameter of	floating-point arithmetic model h	XO2RHC
Parameter of	floating-point arithmetic model n	XO2DIIC
Parameter of	floating point arithmetic model a	XO2DJC
r arameter of Doremotor of	floating-point arithmetic model a	XOODI C
Dependent of	forting point arithmetic model, e_{max}	XOOD IC
rarameter of	force at from fully an action multi input model	AU2DJC
multivariate time series, state set and	Example 1 Foundation the second sec	gronlc
Fast	Fourier transform: See Fourier transform	
DFT: See Discrete	Fourier transform	- 0.0
Single I-D real discrete	Fourier transform	cubeac
Single 1-D Hermitian discrete	rourier transform	cu6ebc
Single 1-D complex discrete	rourier transform	cu6ecc
Multiple 1-D real discrete	rourier 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
1	Free memory allocated by e04mzc	e04mvc
	Free NAG allocated memory for the dendrogram array	g03xzc
	Free memory allocated by h02buc	h02bvc
	Free NAG allocated memory from option structures	h02x7c
	Frees NAG allocated memory to some parameters in	g04c7c
	Frequency table from raw data	g01220
using exact a smoothing by the transgium	frequency (Daniell) window	guiaec
using spectral smoothing by the trapezium	frequency (Daniell) window	giacuc
using spectral smoothing by the trapezium	Frequency (Damen) window	giscac
	Fresnel integral $S(x)$	s20acc
	Fresnel integral $C(x)$	s20adc
	Friedman two-way analysis of variance on k matched	g08aec
Multivariate time series,	gain, phase, bounds, univariate and bivariate (cross)	g13cfc
	Gamma function	s14aac
Log	Gamma function	s14abc
Incomplete	Gamma functions $P(a, x)$ and $Q(a, x)$	s14bac
Euler's constant,	gamma	X01ABC
Computes probabilities for the	gamma distribution	g01efc
Computes deviates for the	gamma distribution	g01ffc
Fits a generalized linear model with	gamma errors	g02gdc
Generates a vector of pseudo-random numbers from a	gamma distribution	g05ffc
Performs the	gaps test for randomness	g08edc
\dots time series, generate n terms of either a symmetric	GARCH process or a GARCH process with asymmetry	g05hkc
Univariate time series, generate n terms of a	GARCH process with asymmetry of the form	g05hlc
Glosten, Jagannathan and Runkle (GJR)	GARCH process	g05hmc
series, parameter estimation for either a symmetric	GARCH process or a GARCH process with asymmetry	g13fac
series, forecast function for either a symmetric	GARCH process or a GARCH process with asymmetry	g13fbc
Univariate time series, parameter estimation for a	GARCH process with asymmetry of the form	g13fcc
Univariate time series, forecast function for a	GARCH process with asymmetry of the form	g13fdc
Glosten, Jagannathan and Runkle (GJR)	GARCH process	g13fec
Glosten, Jagannathan and Runkle (GJR)	GARCH process	g13ffc
minimum of a sum of squares, combined	Gauss-Newton and modified Newton algorithm using	e04fcc
minimum of a sum of squares, combined	Gauss–Newton and quasi-Newton algorithm using 1st	e04gbc
	Gaussian distribution: See Normal distribution	0
	Gaussian elimination: See LU factorization	
1-D	Gaussian quadrature	d01tac
Kernel density estimate using	Gaussian kernel	g10bac
All eigenvalues of	generalized real eigenproblem of the form $Ax = \lambda Bx$	f02adc
All eigenvalues and eigenvectors of	generalized real eigenproblem of the form $Ax = \lambda Bx$	f02aec
All eigenvalues and optionally eigenvectors of	generalized eigenproblem by QZ algorithm, real matrices	f02bic
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 ramma errors	g02gdc
Computes estimable function of a	generalized linear model and its standard error	g02guc
Computes orthogonal rotations for loading matrix	generalized anthomax criterion	g02bac
computes of mogonal rotations for loading matrix,	Concretes a vector of pseudo-random numbers from a	g05bac
	Conceptor a vector of pseudo-random numbers from a	gosiec
Initializa random number	Generates a vector of pseudo-fandolin numbers from a	gosiic
Initialize random number	generating functions to give repeatable sequence	goocbe
	generating functions to give non-repeatable sequence	guacee
save state of random number		JUDCTC
Destance state of random number	generating functions	500010
Restore state of random number	generating functions generating functions	g05cgc
Restore state of random number Set up reference vector for	generating functions generating functions generating pseudo-random integers, Poisson distribution	g05cgc g05ecc
Restore state of random number Set up reference vector for Set up reference vector for	generating functions generating functions generating pseudo-random integers, Poisson distribution generating pseudo-random integers, binomial distribution	g05cgc g05ecc g05edc
Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values?	generating functions generating functions generating pseudo-random integers, Poisson distribution generating pseudo-random integers, binomial distribution Gill-Miller method	g05cgc g05ecc g05edc d01gac
$\begin{array}{c} \text{Restore state of random number} \\ \text{Restore state of random number} \\ \text{Set up reference vector for} \\ \text{Set up reference vector for} \\ \text{ integration of function defined by data values,} \\ \text{Performs the } \chi^2 \end{array}$	generating functions generating functions generating pseudo-random integers, Poisson distribution generating pseudo-random integers, binomial distribution Gill-Miller method goodness of fit test, for standard continuous distributions	g05cgc g05ecc g05edc d01gac g08cgc
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate	generating functions generating functions generating pseudo-random integers, Poisson distribution generating pseudo-random integers, binomial distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using	g05cgc g05ecc g05edc d01gac g08cgc e04dgc
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation)	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill-Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed	g05cgc g05cgc g05ecc g05edc d01gac g08cgc e04dgc e04xac f11jcc
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate of real sparse symmetric linear system, conjugate	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR	g05cgc g05ecc g05ecc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR -group covariance matrices and matrices for	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of withim Computes Mahalanobis squared distances for	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR -group covariance matrices and matrices for group or pooled variance-covariance matrices (for use	g05cgc g05cgc g05ecc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jcc g03dac g03dac
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR -group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after	g05cgc g05cgc g05ecc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR -group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model	g05cgc g05cgc g05ecc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g12bac
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional functions, monotonicity-preserving, piecewise cubic	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill–Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient algorithm, function of several variables using gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR -group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model Hermite, one variable	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g12bac e01bec
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional functions, monotonicity-preserving, piecewise cubic Single 1-D	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill-Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model Hermite, one variable Hermitian discrete Fourier transform	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g12bac e01bec c06ebc
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional functions, monotonicity-preserving, piecewise cubic Single 1-D Multiple 1-D	generating functions generating functions generating pseudo-random integers, Poisson distribution Gill-Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model Hermite, one variable Hermitian discrete Fourier transform Hermitian discrete Fourier transforms	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g12bac e01bec c06ebc c06fqc
Restore state of random number Restore state of random number Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional functions, monotonicity-preserving, piecewise cubic Single 1-D Multiple 1-D Complex conjugate of	generating functions generating pseudo-random integers, Poisson distribution generating pseudo-random integers, binomial distribution Gill-Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model Hermite, one variable Hermitian discrete Fourier transform Hermitian discrete Fourier transforms Hermitian sequence	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g12bac e01bec c06ebc c06gbc
Restore state of random number Set up reference vector for Set up reference vector for Set up reference vector for $Performs the \chi^2$ Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional functions, monotonicity-preserving, piecewise cubic Single 1-D Multiple 1-D Complex conjugate of Complex conjugate of multiple	generating functions generating pseudo-random integers, Poisson distribution generating pseudo-random integers, binomial distribution Gill-Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient and/or Hessian of a function gradient/Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model Hermite, one variable Hermitian discrete Fourier transform Hermitian sequence Hermitian sequences	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g03dbc g12bac e01bec c06ebc c06gbc c06gqc
Restore state of random number Set up reference vector for Set up reference vector for Set up reference vector for integration of function defined by data values, Performs the χ^2 Unconstrained minimum, pre-conditioned conjugate Estimate (using numerical differentiation) of real sparse symmetric linear system, conjugate Computes test statistic for equality of within Computes Mahalanobis squared distances for Allocates observations to Fits Cox's proportional functions, monotonicity-preserving, piecewise cubic Single 1-D Multiple 1-D Complex conjugate of Complex conjugate of multiple Convert	generating functions generating pseudo-random integers, Poisson distribution Gill-Miller method goodness of fit test, for standard continuous distributions gradient algorithm, function of several variables using gradient /Lanczos method, preconditioner computed gradient/Lanczos method, Jacobi or SSOR group covariance matrices and matrices for group or pooled variance-covariance matrices (for use groups according to selected rules (for use after hazard model Hermite, one variable Hermitian discrete Fourier transform Hermitian sequence Hermitian sequences Hermitian sequences to general complex sequences	g05cgc g05cgc g05edc d01gac g08cgc e04dgc e04xac f11jcc f11jec g03dac g03dbc g03dbc g03dbc g12bac e01bec c06ebc c06gbc c06ggc c06ggc

All eigenvalues of complex	Hermitian matrix	f02awc
All eigenvalues and eigenvectors of complex	Hermitian matrix	f02axc
Solution of complex	Hermitian postive-definite simultaneous linear	f04awc
Matrix-vector product, complex	Hermitian matrix (zhemv)	f06scc
Matrix-vector product, complex	Hermitian band matrix (zhbmv)	f06sdc
Matrix-vector product, complex	Hermitian packed matrix (zhpmv)	f06sec
Rank-1 update, complex	Hermitian matrix (zher)	f06spc
Rank-1 update, complex	Hermitian packed matrix (zhpr)	f06sqc
Rank-2 update, complex	Hermitian matrix (zher2)	f06src
Rank-2 update, complex	Hermitian packed matrix (zhpr2)	f06ssc
Matrix-matrix product, one complex	Hermitian matrix, one complex rectangular (zhemm)	f06zcc
Rank- k update of a complex	Hermitian matrix (zherk)	f06zpc
Rank- $2k$ update of a complex	Hermitian matrix (zher2k)	f06zrc
(using numerical differentiation) gradient and/or	Hessian of a function	e04xac
	Hierarchical cluster analysis	g03ecc
function $1/(x-c)$, Cauchy principal value ((Hilbert transform)	d01sqc
Computes a five-point summary (median,	ninges and extremes)	guialc
	Huber estimates: See Robust	0.01
a robust estimation of a correlation matrix,	Huber's weight function	g02hkc
Multi-dimensional adaptive quadrature over	hyper-rectangle	d01wcc
Multi-dimensional quadrature over	Here are a lise Transitions	dUIXDC
	Hyperbolic Functions	S
I ihmome	identification	guibic
Library	impulse mean and function and its standard error	a00aac
Multivariate time series, noise spectrum, bounds,	Impulse response function and its standard error Incomplete Common functions $P(a, n)$ and $O(a, n)$	g13cgc
Pool anargo ungummetric linear systems	incomplete Gamma functions $F(a, x)$ and $Q(a, x)$	f11dac
Solution of linear systems,	incomplete LU racconditioning matrix generated by	flldbc
Beal sparse symmetric matrix	incomplete Do preconditioning matrix generated by	flliac
Computer cluster	indicator variable (for use after g03ecc)	r03eic
Computes cluster	Inequality of two complex numbers	a02chc
1-D quadrature adaptive	infinite or semi-infinite interval	d01smc
1-D quadrature adaptive semi-	-infinite interval weight function $\cos(\omega r)$ or	d01ssc
Bounded	influence: See Bobust	401000
Calculates standardized residuals and	influence statistics	g02fac
Kalman filters, square root,	information, time varying	g13ecc
Kalman filters, square root,	information, time invariant	g13edc
	Initial value problem: See IVP	0
	Initialization of trigonometric coefficients for FFTs	c06gzc
	Initialization function for Chapter e04 option setting	e04xxc
	Initialization function for Chapter g13 option setting	g13bxc
	Initialize random number generating functions to give	g05cbc
	Initialize random number generating functions to give	g05ccc
	Initialize option structure to null values	h02xxc
Multivariate time series, estimation of multi-	-input model	g13bec
state set and forecasts from fully specified multi-	-input model	g13bjc
	Integer programming problem, branch and bound	h02bbc
Largest representable	integer	X02BBC
Complex number raised to an	integer power	a02ddc
Pseudo-random	integer from uniform distribution	g05dyc
Pseudo-random	integer from reference vector	g05eyc
Set up reference vector for generating pseudo-random	integers, Poisson distribution	g05ecc
Set up reference vector for generating pseudo-random	integers, binomial distribution	g05edc
values, interpolant computed by e01bec, definite	integral, one variable	e01bhc
Evaluation of fitted cubic spline, definite	integral	e02bdc
Exponential	integral $E_1(x)$	s13aac
Cosine	integral $C_1(x)$	s13acc
Sine	integral $S_1(x)$	s13adc
Fresnel	integral $S(x)$	s20acc
Fresner	integral $C(x)$	s20adc
Degenerate symmetrised elliptic	integral of 1st kind $R_{-}(x, y)$	SZIDAC
Symmetrised elliptic	integral of 2nd kind $R_{P}(x, y, z)$	sZIDDC
Symmetrised elliptic	integral of 3rd kind $R_{2}(x, y, z)$	anthda
	integral of the second kind with complex argument	e01daa
1-D auadreture	integration of function defined by data values	d01gac
Numerical	integration	d01
ODEs. IVP. Runge-Kutta method	integration over range with output	d02pcc
ODEs, IVP, Runge–Kutta method,	integration over one step	d02ndc
Interpolating functions, cubic spline	interpolant, one variable	e01bac
Interpolated values.	interpolant computed by e01bec. function only. one	e01bfc
r	· · · · · · · · · · · · · · · · · · ·	

Interpolated values, interpolant computed by offber, densite integral, ore enterpolated values, evaluate interpolated values, interpola			
Interpolated values, interpolant computed by of Dise, identifie integral, one of Interpolated values, interpolations interpolations interpolated values, interpolation computed by of Dise, e0 Interpolated values, interpolation computed by of Dise, e0 Interpolated values, interpolation computed by of Dise, e0 Interpolated values, evaluation tomputed by of Dise, e0 Interpolating functions, future backets explored values, evaluation of Dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, evaluation of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, interpolation of didgle dise, and the Dise of Dise, IVP, Ruse-Futa method, integration over range with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over ansage with do ODEs, IVP, Ruse-Futa method, integration over	Interpolated values,	interpolant computed by e01bec, function and 1st	e01bgc
Interpolated values, evaluate interpolate computed by e01sec, two dimensions interpolated values, interpolate computed by e01bec e0 Interpolated values, evaluate interpolate computed by e01bec e0 Interpolated values, evaluate interpolate computed by e01bec e0 Interpolated values, evaluate interpolate computed by e01bec e0 Interpolating functions, end bis spline interpolation for d02pde ODEs, IVP, interpolation for d02pde ODEs, IVP, interpolation for d02pde ODEs, IVP, interpolation for d02pde Converts MPSX data file defining interpolation for d02pde ODEs, IVP, File polation for d02pde ODEs, IVP, Runge-Foutta method, intergolation our end solution is zero,	Interpolated values,	interpolant computed by e01bec, definite integral, one	e01bhc
Interpolated values, interpolant computed by eDbec	Interpolated values, evaluate	interpolant computed by e01sac, two dimensions	e01sbc
Interpolated values, interpolant computed by e01bec, e0 Interpolated values, evaluate interpolated computed by e0 Interpolating functions, cutois spline interpolation, conc e0 Interpolating functions, cutois spline interpolation, conc e0 ODEs, IVP, interpolation for d02q6 polynomial fit, special data points (including interpolation) e0 ODEs, IVP, interpolation for d02q6 polynomial fit, special data points (including interpolation) e0 ODEs, IVP, interpolation for d02q6 polynomial fit, special data points (including interpolation) e0 ODEs, IVP, interpolation for d02q6 polynomial fit, special data points (including interpolation) e0 ODEs, IVP, interpolation for d02q6 polynomial fit, special data points (including interpolation) e0 ODEs, IVP, House Method, Jacobi en Software required by h02bbe or oformat e0 ODEs, IVP, BDF method, until function of solution is zero, e0 ODEs, IVP, Runge-Kutta method, integration over range with e0 ODEs, IVP, Runge-Kutta method, integration over range with e0 ODEs, IVP, Runge-Kutta method, integration over range with e0 ODEs, IVP, Runge-Kutta method, integration over range with e0 ODEs, IVP, set-up for d02pcd di 00DEs, IVP, resets end of range for d02pdc expstem, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit expstem, conjugate gradient/Lancose method, Jacobi or SSOR preconditioner (Black Box) fit system, conjugate gradient/Lancose method, Jacobi or SSOR preconditioner (Black Box) fit expstem, conjugate gradient/Lancose method, Jacobi or SSOR preconditioner (Black Box) fit system, conjugate gradient/Lancose method, Jacobi or SSOR preconditioner (Black Box) fit system, requires function for a clausing Jacobian Methor with real arguments z Kelvin function ker z Kelvin function ker z Kelvin function ker z Kelvin function ker z system, re	r	Interpolated values, interpolant computed by e01bec.	e01bfc
Interpolated values, interpolation computed by edition		Interpolated values, interpolant computed by collect	e01bgc
interpolated values, evaluate interpolate computed by so interpolating functions, monotonicity-preserving,		Interpolated values, interpolant computed by collect,	e01bbc
Interpolated subs, scaling joint coupling interpolation or of Interpolating functions, acubic splice interpolation, and of Interpolating functions, method of Renka and Cline, of ODEs, IVP, interpolation for d02q/c ODEs, IVP, problem to formation function Inverse distribution ODEs, IVP, Problem to formation function ODEs, IVP, Problem to formation function is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, PDP method, until function of solution is zero, of ODEs, IVP, Runge-Kutta method, integration over range with ODEs, IVP, Runge-Kutta method, integration over any with ODEs, IVP, error assessment disposite for d02pcc and d02pdc ODEs, IVP, error assessment disposites for d02pcc ODEs, IVP, error assessment disposi		Interpolated values, interpolant computed by corbec,	e01phc
Interpolating functions, cuine spine interpolatin, on et Interpolating functions, menodonity-preserving, Interpolating functions, method of Renka and Cline, ODEs, IVP, Interpolation for d02pdc d005, IVP, Interpolation for d02pdc d005, IVP, Interpolation for d02pdc d005, IVP, Interpolation for d02pdc d005, IVP, Interpolation function Least-squares curve cubic spline fit (including interpolation) Least-squares curve cubic spline fit (including interpolation) Converts MPSX data file defining IP or LP problem to format required by h02bbc or e01mfc interpolation functions is zero, d0 ODEs, IVP, Runge–Kutta method, integration over range with d0 ODEs, IVP, Runge–Kutta method, integration over and setting ODEs, IVP, set-up for d02pcd d0 DEs, IVP, set-up for d02pcd d0 DEs, IVP, set-up for d02pcd d0 DEs, IVP, reset set and range for d02pcd d0 DEs, IVP, reset set and frange for d02pcd d0 DEs, IVP, reset and for ange for d02pcd d0 DEs, IVP, freening function for ad2pdc d0 DEs, IVP, freening function for d02pdc d0 DEs, IVP, freening function for d02pdc d0 DEs, IVP, freening function for d02pdc d0 DEs, IVP, freening function for use with d02qfc d0 DEs, IVP, freening functions set and ange constance, time avariance function for calculating Jacobian of 13d carvatives d1 system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) fit system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR precon		Interpolated values, evaluate interpolant computed by	euisbc
Interpolating functions, monotonety-preserving, ee Interpolating functions, fitting biotic spline, data on ee ODEs, IVP, interpolation for d02qic 0DEs, IVP, and interpolation 0DEs, IVP, and interpolation 0DEs, IVP, and interpolation 0DEs, IVP, BDP method, until function of solution is zero, d0 0DEs, IVP, Runge-Kutta method, integration over range with 0DEs, IVP, Runge-Kutta method, integration over one step 0DEs, IVP, set-up for d02pc and d02pdc 0DEs, IVP, set-up for d02pc and 02pdc 0DEs, IVP, set-up for d02pdc 0DEs, IV		Interpolating functions, cubic spline interpolant, one	e01bac
Interpolating functions, fitting incide spline, data on e6 Interpolating functions, method of Renka and Cline, of ODEs, IVP, interpolation for d02pdc d02, fitting functions, method of Renka and Cline, of ODEs, IVP, interpolation for d02pdc least-squares curve cubic spline fit (including interpolation) Least-squares curve cubic spline fit (including interpolation) furverse Normal distribution function function function for d01m Inverse Normal distribution function of solution is zero, d0 ODEs, IVP, Runge–Kutta method, integration over one step 0DEs, IVP, Runge–Kutta method, integration over one step 0DEs, IVP, set-up for d02pdc 0DEs, IVP, set-up for d02pdc 0DEs, IVP, resets end of range for d02pdc 0DEs, IVP, resets end of range for d02pdc 0DEs, IVP, resets end of range for d02pdc 0DEs, IVP, reset set of ange for d02pdc 0DEs, IVP, reset set for ange for d02pdc 0DEs, IVP, reset for ange for d02pdc 1 system, RCMRES, CCS, or Bi-CCSTAB method, Jacobi or SSOR preconditioner (Black Box) for 1 system, RCMRES, cCS, or Bi-CCSTAB method, for ange for d02pdc 1 system, RCMRES, cCS, or Bi-CCSTAB method, for ange for d02pdc 1 system, RCMRES, cCS, or Bi-CCSTAB method,		Interpolating functions, monotonicity-preserving,	e01bec
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$		Interpolating functions, fitting bicubic spline, data on	e01dac
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polynomial fit, special data points (including interpolation) 60 Least-squares curve cubic spline fit (including interpolation) 60 Inverse Normal distribution function 6 (Converts MPSX data file defining IP or LP problem to format required by h02bbc or oblime for VP = Initial Value Problem to format required by h02bbc or oblime for ODEs, IVP, Adams method, until function of solution is zero, 60 ODEs, VIP, Runge-Kuta method, integration over range with 60 ODEs, IVP, Rest-squares and of adopted and 002pdc ODEs, IVP, set-square for d02pdc ODEs, IVP, rest-square conditioner (Black Box) fit system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) fit system, and math complex 2 Jacobian elliptic functions with rad-arguments 2 K-means cluster analysis K-means cluster analysis Kelvin function ber z Kelvin function ber z Kelvin function ber z Kelvin function ker z Kelvin funct	ODEs, IVP,	interpolation for d02qfc	d02qzc
Least-squares curve cubic spline fit (including interpolation) (Inverse Normal distribution function (Inverse distributions (Inverse distributions)) (Inverse distributions) (polynomial fit, special data points (including	interpolation)	e02afc
Inverse Normal distribution function get Inverse distributions (p) Converts MPSX data file defining IP or LP problem to format required by h02bbc or eVinter VP = Initial Value Problem ODEs, IVP, Adams method, until function of solution is zero, 40 ODEs, IVP, Runge-Kutta method, integration over range with 40 ODEs, IVP, Runge-Kutta method, integration over rone step ODEs, IVP, Runge-Kutta method, integration over rone step ODEs, IVP, setup for d02pce and d02pde 40 ODEs, IVP, resets end of range for d02pde 40 ODEs, IVP, setup for d02pce and d02pde 40 ODEs, IVP, reeing function for use with d02pde 40 ODEs, IVP, sterup for d02pde 40 ODEs, IVP, sterup for d02pde 40 ODEs, IVP, sterup for d02pde 40 ODEs, IVP, sterup for d02pde 40 ODEs, IVP, reeing function for use with d02pde 40 ODEs, IVP, reeing function for use with d02pde 40 00Es, IVP, interpolation for d02pde 40 41 42 44 44 44 44 45 45 45 45 45 45	Least-squares curve cubic spline fit (including	interpolation)	e02bac
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$		Inverse Normal distribution function	g01cec
Converts MPSX data file defining IP or LP problem to format required by h02bbe or e04mfe in IVP = Initial Value Problem ODEs, IVP, Adams method, until function of solution is zero, 40 ODEs, stiff UP, BDF method, until function of solution is zero, 40 ODEs, IVP, Runge-Kutta method, integration over range with 40 ODEs, IVP, Runge-Kutta method, integration over one step 0 DDEs, IVP, set-up for 402pdc and 402pdc 40 ODEs, IVP, resets end of range for 402pdc 40 ODEs, IVP, error assessment diagnostics for 402pcc and 402pdc 40 ODEs, IVP, reents method with root-finding 40 0 DEs, IVP, freeing function for use with 402qfc 40 0 DEs, IVP, reents method, Jacobi or SSOR preconditioner (Black Box) 51 52 54 55 55 55 55 55 55 55 55 55		Inverse distributions	g01
IVP = Initial Value Problem ODEs, IVP, Adams method, until function of solution is zero, 40 ODEs, IVP, Runge-Kutta method, integration over one step ODEs, IVP, Runge-Kutta method, integration over one step ODES, IVP, Runge-Kutta method, integration over one step ODES, IVP, set-up for d02pcc and d02pde ODES, IVP, resets end of range for d02pde ODES, IVP, resets end of range for d02pde ODES, IVP, resters end of range for d02pde ODES, IVP, set-up for d02pde ODES, IVP, set-up for d02pde ODES, IVP, dams method with root-finding ODES, IVP, deams method with root-finding ODES, IVP, freeing function for d02pde ODES, IVP, adams method, Jacobi or SSOR preconditioner (Black Box) file <i>Lacobian</i> elliptic functions such and white complex <i>Suchama filters</i> , square root, information, time varying ging Kalman filters, square root,	Converts MPSX data file defining	IP or LP problem to format required by h02bbc or e04mfc	h02buc
$\begin{array}{c} ODEs, IVP, Adams method, until function of solution is zero, 40\\ \text{ODEs, stiff IVP, BDF method, until function of solution is zero, 40\\ \text{ODEs, IVP, Runge-Kutta method, integration over range with 40\\ \text{ODEs, IVP, Runge-Kutta method, integration over one step 40\\ \text{ODEs, IVP, results and dyock and dyock and dyock 400 and 00 and 0$	Ű	IVP = Initial Value Problem	
ODEs, stiff IVP, BDF method, until function of solution is zero,	ODEs.	IVP . Adams method, until function of solution is zero	d02cic
ODEs, IVP, Runge-Kutta method, integration over range with 40 ODEs, IVP, Runge-Kutta method, integration over one step ODEs, IVP, Runge-Kutta method, integration over one step ODEs, IVP, set-up for d02pc and d02pdc 40 ODEs, IVP, interpolation for d02pc 40 ODEs, IVP, interpolation for d02pc 40 ODEs, IVP, and ans method with root-finding 40 ODEs, IVP, resetup function for use with d02pc 40 ODEs, IVP, foreing function for use with d02pc 40 40 40 40 40 40 40 40 50 50 50 50 50 50 50 50 50 5	ODEs. stiff	IVP . BDF method, until function of solution is zero,	d02eic
$ \begin{array}{c} \text{ODEs, IVP, Runge-Kutta method, integration over one step \\ \text{ODEs, IVP, Restey of d02pc and d02pdc } \\ \text{ODEs, IVP, rests end of range for d02pdc } \\ \text{ODEs, IVP, rests end of range for d02pdc } \\ \text{ODEs, IVP, rests end of ange for d02pdc } \\ \text{ODEs, IVP, error assessment diagnostics for d02pcc and d02pdc } \\ \text{ODEs, IVP, dams method with root-finding } \\ \text{ODEs, IVP, setup for d02qfc } \\ \text{ODEs, IVP, setup for d02qfc } \\ \text{ODEs, IVP, freeing function for use with d02qfc } \\ \text{ODEs, IVP, interpolation for ad02qfc } \\ \text{ODEs, IVP, interpolation for d02qfc } \\ Interpolation for additionary of the step is th$	ODFs	IVP Runge-Kutta method integration over range with	d02ncc
$ \begin{array}{c} \text{Correst} \ \mathbf{WP}, \text{ set-up for d02pcc and d02pdc} & d0 \\ \text{ODEs, WP, rests end of range for d02pdc} & d0 \\ \text{ODEs, WP, rests end of range for d02pdc} & d0 \\ \text{ODEs, WP, ror assessment diagnostics for d02pc and d02pdc} & d0 \\ \text{ODEs, WP, Adams method with root-finding} & d0 \\ \text{ODEs, WP, set-up for d02qfc} & d0 \\ \text{ODEs, WP, rest-up for d02qfc} & d0 \\ \text{ODEs, WP, interpolation for d02qfc} & d0 \\ Malman filters, square root, covariance, time varying g1 Kalman filters, square root, information, time invariant Kelvin function ker x & s1 Kelvin function ker x$	ODEs,	IVP Runge-Kutta method, integration over one step	d02pdc
$ \begin{array}{c} \text{ODEs, IVP, rests end of range for 002pdc \\ \text{ODEs, IVP, rests end of range for 002pdc \\ \text{ODEs, IVP, rests end of range for 002pdc \\ \text{ODEs, IVP, rests ensement diagnostics for 002pcc and 002pdc \\ \text{ODEs, IVP, actup for 0d2pfc } \\ \text{ODEs, IVP, setup for 0d2pfc } \\ \text{ODEs, IVP, setup for 0d2pfc } \\ \text{ODEs, IVP, rests end of rouge with 002pfc } \\ \text{ODEs, IVP, rests end 0d2pfc } \\ \text{ODEs, IVP, freing function for use with 002pfc } \\ \text{ODEs, IVP, interpolation for 0d2pfc } \\ \text{Interval} Nathana filters, square root, covariance, time varying fl Nathana filters, square root, covariance, time varying fl Kalman filters, square root, information, time varying fl Kalman filters, square root, information, time varying fl Kelvin functio$	ODEs,	IVP set up for d02pcc and d02pdc	doopuc
$ \begin{array}{c} \text{ODEs, IVP, interpolation for d02pdc \\ \text{ODEs, IVP, interpolation for d02pdc and d02pdc \\ \text{ODEs, IVP, atoms method with root-finding \\ \text{ODEs, IVP, sterpolation for d02pdc } \\ \text{ODEs, IVP, sterpolation for d02pdc } \\ \text{ODEs, IVP, interpolation for use with d02qfc } \\ \text{ODEs, IVP, interpolation for d02qc } \\ \text{Sector function for acculating Jacobian of Ist derivatives } \\ Sector function for acculation, then invariant fit Kalman filters, square root, covariance, time invariant fit Kalman filters, square root, information, time invariant fit Kalman filters, square root, information, time invariant fit Kelvin function ber x \\ Kelvin function kei x \\ Kelvin function ke$	ODEs,	IVP , set-up for d02pcc and d02pdc	402000
ODEs, IVP, microbation for d02pcc and d02pdc ODEs, IVP, Adams method with root-finding ODEs, IVP, Adams method with root-finding ODEs, IVP, set-up for d02qfc ODEs, IVP, freeing function for use with d02qfc ODEs, IVP, interpolation for d02qfc Interpolation for d02qfc Interpo	ODEs,	IVP , resets end of range for do2pdc	d02pwc
$ \begin{array}{c} \text{ODEs, IVP, arror assessment diagnostics for d02pc and d02pc \\ \text{ODEs, IVP, sterp for d02qfc } \\ \text{ODEs, IVP, freeing function for use with d02qfc } \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{ODEs, IVP, interpolation for d02qfc } \\ \text{d0} \\ \text{Dets, user's function for calculating Jacobiar of Std Fervoultioner (Black Box) } \\ \text{f1} \\ \text{Check user's function for calculating Jacobian of Ist derivatives } \\ \text{d1} \\ \text{d2} \\ \text{d2} \\ \text{d2} \\ \text{d3} \\ \text{d4} \\ \text{d3} \\ \text{d4} \\ \text{d5} \\ \text{d4} \\ \text{d4} \\ \text{d5} \\ \text{d4} \\ \text{d4} \\ \text{d5} \\ \text{d4} \\ \text{d5} \\ \text{d6} \\ \text{d7} \\ $	ODEs,	IVP , interpolation for d02pdc	d02pxc
ODEs, IVP, Adams method with root-inding ODEs, IVP, Adams method with root-inding ODEs, IVP, freeing function for use with d02qfc 0DEs, IVP, freeing function for use with d02qfc 0DEs, IVP, interpolation for calculating Jacobia or ISOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black Box) 11 symmetric linear system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black III) symmetric linear system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black III) symmetric linear system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black III) symmetric linear system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black III) symmetric linear system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black III) symmetric linear system, conjugate gradient (Lanczos method, Jacobi or SSOR preconditioner (Black III) sy	ODEs,	IVP , error assessment diagnostics for d02pcc and d02pdc	d02pzc
$\begin{array}{c} \text{ODEs}, \mathbf{VP}, \text{ set-up for d02qfc} \\ \text{ODEs}, \mathbf{VP}, \text{ interpolation for use with d02qfc} \\ \text{ODEs}, \mathbf{VP}, \text{ interpolation for d02qfc} \\ \text{ODEs}, \mathbf{VP}, \text{ interpolation for d02qfc} \\ \text{ODEs}, \mathbf{VP}, \text{ interpolation for d02qfc} \\ oder system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) \\ \text{Check user's function for calculating Jacobian of 1st derivatives \\ Jacobian theta functions sn, en and dn with complex s2 \\ Jacobian theta functions with real arguments \\ K-means cluster analysis \\ Kalman filters, square root, covariance, time invariant gn Kalman filters, square root, information, time varying gn Kalman filters, square root, information gn Kalman filters, square root, information gn Kalman filters, square root, information gn Kalman filters, square scale stapate of survival gn Kelvin function her x Kelvin function her x filter function her $	ODEs,	IVP, Adams method with root-finding	d02qfc
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	ODEs,	IVP, set-up for d02qfc	d02qwc
	ODEs,	\mathbf{IVP} , freeing function for use with d02qfc	d02qyc
system, RGMRES, CGS, or Bi-CGSTAB method, Jacobi or SSOR preconditioner (Black Box) f1 system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) f1 Check user's function for calculating Jacobian of 1st derivatives 40 Jacobian elliptic functions son, cn and dn with complex s2 Jacobian theta functions with real arguments 52 K-means cluster analysis Kalman filters, square root, covariance, time invariant Kalman filters, square root, covariance, time invariant Kalman filters, square root, information, time varying Kalman filters, square root, information, time invariant Kalman filters, square root, information, time invariant Kalman filters, controller Hessenberg transformation Computes Kaplan-Meier (product-limit) estimates of survival Kelvin function kei x Kernel density estimate using Gaussian kernel Kernel density estimate using Gaussian kernel Kernel density estimate tusing Fausen-kernet kautomatic knot placement, scattered data Performs the con-sample Kolmogorov-Smirnov test for standard distributions Performs the con-sample Kolmogorov-Smirnov test All zeros of real polynomial, modified Laguerre method Summetric linear system, conjugate gradient/Lanczos method, preconditioner on k g0 Mean, variance, skewness, kurtosis etc, one variable, from raw data All zeros of real polynomial, modified Laguerre method Summetric linear system, conjugate gradient/Lanczos method, preconditioner computed by f11jac f1 Largest persistive model number Largest representable integer LDL ^T factorization of real symmetric positive-definite f0 Larg	ODEs,	\mathbf{IVP} , interpolation for d02qfc	d02qzc
system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black Box) [1] Check user's function for calculating Jacobian of 1st derivatives [2] Jacobian elliptic functions sn, cn and dn with complex s2 Jacobian theta functions with real arguments [2] K-means cluster analysis [2] Kalman filters, square root, covariance, time invariant [2] Kalman filters, square root, covariance, time invariant [2] Kalman filters, square root, information, time arying [2] Kalman filters, square root, information, time arying [2] Kalman filters, square root, information, time invariant [2] Kalman filters, square root, information, time invariant [2] Kalman filters, controller Hessenberg transformation [2] Computes Kaplan-Meier (product-limit) estimates of survival [2] Kelvin function kei x [3] Kelvin function ker x [3] Kelvin function ker x [3] Kelvin function ker x [3] Kelvin function ker x [3] Kernel density estimate using Gaussian kernel [3] Least-squares cubic splines with automatic knot placement, data on rectangular grid [3] Performs the one-sample Kolmogorov-Smirnov test for standard distributions [3] Mean, variance, skewness, kurtosis etc, one variable, from raw data [3] All zeros of craplophynnial, modified Laguerre method [4] All zeros of real polynomial, modified Laguerre method [4] All zeros of real polynomial, modified Laguerre method [4] argest porsitive model number [4] symmetric linear system, conjugate gradient/Lanczos method, Jacobi or SSOR preconditioner (Black 11] argest porsitive model number [4] Largest portive model number [4] Largest portive model number [4] Largest polynomial, andified Laguerre method [4] Largest polynomial, schitter [4] Largest polynomial, schitter [4] Largest polynomial, schitter [4] Largest portive model number [4] Largest portive model number [4] Largest portive model number [4]	system, RGMRES, CGS, or Bi-CGSTAB method,	Jacobi or SSOR preconditioner (Black Box)	f11dec
Check user's function for calculating Jacobian of 1st derivatives 600 Jacobian elliptic functions sn, en and en with complex 22 Jacobian theta functions with real arguments 76 means cluster analysis 76 Malman filters, square root, covariance, time varying 71 Kalman filters, square root, covariance, time varying 71 Kalman filters, square root, information, time varying 72 Kalman filters, square root, information, time varying 74 Kalman filters, square root, information, time varying 75 Kalman filters, square root, information the vary reason was analysis of variance on k in suffices spline with automatic knot placement, scattered data go 76 Ka	system, conjugate gradient/Lanczos method,	Jacobi or SSOR preconditioner (Black Box)	f11jec
Jacobian elliptic functions sn, en and dn with complex s2 Jacobian theta functions with real arguments Kalman filters, square root, covariance, time varying Kalman filters, square root, covariance, time invariant Kalman filters, square root, information, time varying Kalman filters, square filters, square subic splines with automatic knot placement, acta on rectangular grid filters, function ker x for standard distributions for forms the two-sample Kolmogorov-Smirnov test for standard distributions for forforms the two-sample Kolmogorov-Smirnov test for standard distributions for forforms the two-sample Kolmogorov-Smirnov test for standard distributions for form as young and young anot young and young and young and young and young and young a	Check user's function for calculating	Jacobian of 1st derivatives	e04yac
$ \begin{array}{c} Jacobian theta functions with real arguments K-means cluster analysis (K-means cluster analysis) (K-means clusteran analy$		Jacobian elliptic functions sn, cn and dn with complex	s21cbc
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	Least-squares surface fit by bicubic splines with	e02ddc
Convex QP problem or linearly-constrained linear	least-squares problem	e04ncc
Covariance matrix for nonlinear	least-squares problem	e04ycc
Legendre and associated	Legendre functions of the first kind	s22aac
	Legendre and associated Legendre functions of the first	s22aac
Computes the maximum	likelihood estimates of the parameters of a factor	auuaac
Computes Kaplan-Meier (product	limit) estimates of survival probabilities	guacac
Computes Rapian-Meler (product-	Linear programming problem	e04mfc
technique with deferred correction, general	linear problem	d02gbc
Convex QP problem or linearly-constrained	linear least-squares problem	e04ncc
Solution of complex simultaneous	linear equations with multiple right-hand sides	f04adc
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Computes confidence intervals for differences between	means computed by g04bbc or g04bcc	g04dbc
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	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
	${\bf Read}$ MPSX data for sparse LP or QP problem from	e04mzc
	${\bf Read}$ 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)	106ztc
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
Nonlincon	reference vector for ARMA time series model with	guonac
Nonlinear Simple linear	regression with or without constant term mission	e04
Simple linear	regression confidence intervale	guzcac
Simple linear Fits a conoral (multiple) linear	regression model	ROJGCCC
Add/delete an observation to/from a general linear	regression model	gozdac
Fatimates of linear parameters and general linear	regression model from undated model	gozacc
Add a new variable to a general linear	regression model	gozaac
Delete a variable from a general linear	regression model	Rozaec
Fits a general linear	regression model for new dependent variable	gozdrc
standard errors of parameters of a general linear	regression model for given constraints	a02dFc
Computes estimable function of a general linear	regression model and its standard error	g02dnc
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itobust		0

Interpolating functions, method of	Renka and Cline, two dimensions	e01sac
NAG memory freeing function for use with	Renka and Cline method	e01szc
	Beorder data to give ordered distinct observations	g10zac
Real sparse unsymmetric matrix	reorder routine	f11zac
Beal sparse symmetric matrix	reorder routine	f11zbc
ODE UP	resets and of range for d02ndcf	d02puc
onelucia model feator leadings communalities and	residual completions	d02pwc
analysis model, factor loadings, communanties and		guscac
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
v i i	Robust regression, standard <i>M</i> -estimates	g02hac
	Robust estimation, median, median absolute deviation	g07dac
	Bobust estimation <i>M</i> -estimates for location and scale	g07dbc
Calculates a	robust estimation, in correlation matrix Huber's	g07hbc
Square	root of a complex number	g02like
ODE: WD Adams mathed with	root of a complex number	402ucc
ODES, IVP, Adams method with	root-inding	d02q1C
Computes orthogonal	rotations for loading matrix, generalized orthomax	guabac
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
Universita time series	sample autocorrelation function	g13abc
Universite time series,	comple autocorrelation function	giJabc
Multivariate time series, smoothed	sample spectrum using spectral smoothing by the	g13cbc
Multivariate time series, smoothed	sample cross spectrum using spectral smoothing by the	giscac
Sign test on two paired	samples	gusaac
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 $e^x K_{\nu/4}(x)$	s18edc
	Scaled modified Bessel functions $e^x K_{\alpha+n}(x)$ 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 aironvalues and aironvectors of real	f02000
	Selected eigenvalues and eigenvectors of real	102000
Allocator charmenting to many and the	selected eigenvalues and eigenvectors of complex	TUZgCC
Allocates observations to groups according to	selected rules (for use after 2021)	guaacc
Allocates observations to groups according to	selected rules (for use after gU3dac)	guadco
table from set of classification factors using	selected statistic	g11bac
I-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	g08000
т		Sign test on two paned samples	guoaau
ł	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 roal	simultaneous linear equations (coefficient matrix	f0/210
		simultaneous linear equations (coefficient matrix	1044
	Solution of complex	simultaneous linear equations (coefficient matrix	104akc
	Solution of real	simultaneous linear equations, one right-hand side	f04arc
	Solution of complex Hermitian postive-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
	Eargest permissible argument for	Since internal Ci(n)	-12-1-
	~ .	Sine integral $SI(x)$	sisado
	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	d01e1c
•	quadrature, adaptive, inite interval, anowing for	singularities at user-specified break-points	101510
	inite interval, weight function with end-point	singularities of algebraico-logarithmic type	autspc
		$\sinh x$	s10abc
	arc	$\sinh x$	s11abc
	Mean, variance,	skewness, kurtosis etc, one variable, from raw data	g01aac
		Smallest positive model number	XUSAKC
	Defense the second Relations	Smallest positive model number	NOZANO
	Performs the one-sample Kolmogorov-	-Smirnov test for standard distributions	guacoc
	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	smoother sample cross speetrum using speetrum	g100000
	smoothed data sequence, using running median	smoothers	giucac
	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 tranezium frequency (Daniell) window	g13chc
•	series, smoothed sample spectrum using spectral	smoothing by the trapezium nequency (Damen) window	giococ
	smoothed sample cross spectrum using spectral	smoothing by the trapezium frequency (Daniell) window	g13cdc
	Jacobian elliptic functions	\mathbf{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)	m01c+c
		boit a set of arbitrary objects (stable sort)	morece
	Sort a set of arbitrary objects (stable	sort)	mUICTC
	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, BGMRES, CGS	f11dcc
	Solution of real	sparse unsymmetric linear system, PCMPES, CCS	f11doo
		sparse unsymmetric inteal system, redwirds, CGS	TITUEC
	Real	sparse symmetric matrix, incomplete Cholesky	flljac
	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
	Bool	sparse summetric matrix reorder routine	f117bc
		/g	111200
	Kendall/	spearman non-parametric rank correlation coefficients,	gu2brc
	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 enjec emothed comple enerthing	spectral smoothing by the transgium frequency	0120h-
	time series, smoothed sample spectrum using	spectral smoothing by the trapezium frequency	RIDCDC
	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
	Internal ation functions	spline internalant one veriable	011
	Interpolating functions, cubic	spine interpolant, one variable	eurpac
	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	e02hcc
	Evaluation of fitted cubic	spline, definite integral	002000
	Evaluation of fitted cubic	spine, dennite integral	euzbac
	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

g10abc Fit cubic smoothing **spline**, smoothing parameter given Fit cubic smoothing spline, smoothing parameter estimated g10acc e02dcc Least-squares surface fit by bicubic splines with automatic knot placement, data on ... Least-squares surface fit by bicubic splines with automatic knot placement, scattered data e02ddc e02 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 g13edc Kalman filters, square root, information, time invariant Computes Mahalanobis ${\bf squared}$ distances for group or pooled \ldots g03dbc $Multivariate time series, cross amplitude spectrum, {\bf squared} coherency, bounds, univariate and bivariate \dots$ g13cec e02adc Least-squares curve fit, by polynomials, arbitrary data ... 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 e04vcc ... 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 g02gkc Estimates and standard errors of parameters of a general linear model function of a generalized linear model and its **standard** error g02gnc g02hac Robust regression, standardM-estimates g04bbc ... randomized design, treatment means and standard errors g04bcc ... row and column design, treatment means and standard errors g04cac ... complete factorial design, treatment means and standard errors g07dac ... median, median absolute deviation, robust standard deviation ... M-estimates for location and scale parameters, standard weight functions g07dbc g08cbc ... the one-sample Kolmogorov-Smirnov test for standard distributions Performs the χ^2 goodness of fit test, for standard continuous distributions g08cgc ... bounds, impulse response function and its standard error g13cgc g02fac Calculates standardized residuals and influence statistics 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 $\ldots \mathrm{set}$ of classification factors using selected $\mathbf{statistic}$ 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 e04unc Minimum of a ${\bf sum}$ of squares, nonlinear constraints, sequential QP \ldots 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 \mathbf{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 f02abc All eigenvalues and eigenvectors of real symmetric matrix ... 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- k update of a real	symmetric matrix (dsyrk)	f06ypc
Rank- $2k$ update of a real	symmetric matrix (dsyr2k)	f06yrc
Matrix-matrix product, one complex	symmetric matrix, one complex rectangular (zsymm)	f06ztc
Rank- k update of a complex	symmetric matrix (zsyrk)	f06zuc
Rank- $2k$ 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)	106pjc
	System of equations, real triangular band matrix (dtbsv)	106pkc
	System of equations, real triangular packed (dtpsv)	TUGPIC
	System of equations, complex triangular matrix (ztrsv)	IU6SJC
	System of equations, complex triangular (ztbsv)	106skc
Colution of	System of equations, complex triangular (2tpsv)	IUGSIC
Solution of	system of nonlinear equations using function values only	cO5tbc
Solution of	system of nonlinear equations using 1st derivatives	formin
Solves a	system of equations with multiple right-hand (dtrsm)	foeria
Solution of real sparse unsummetric linear	system BCMRES CCS or Bi CCSTAR method	1002JC
Solution of real sparse unsymmetric linear	system, RGMRES, CGS or Bi-CGSTAB method,	flldoc
Solution of real sparse symmetric linear	system, nominate gradient /Lanczos method /	fllice
Solution of real sparse symmetric linear	system, conjugate gradient/Lanczos method, Jacobi or	flliec
Real sparse unsymmetric linear	systems incomplete LU factorization	f11dac
Computes probabilities for Student's	t-distribution	g01ebc
Computes deviates for Student's	t-distribution	g01cbc
Computes probabilities for the non-central Student's	t-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
	$\tanh x$	s10aac
arc	$\tanh x$	s11aac
Shapiro and Wilk's W	test for Normality	g01ddc
Computes	test statistic for equality of within-group covariance	g03dac
Computes t	-test statistic for a difference in means between two	g07cac
Sign	test on two paired samples	g08aac
Median	\mathbf{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	tneta functions with real arguments	s21ccc
reference vector for ARMA	time series model with following terms generation	gubnac
	time series, generate n terms of either a symmetric	gU5nKC
	time series, generate <i>n</i> terms of an asymmetric Clocker	gOEP
	time series, generate <i>n</i> terms of an asymmetric Glosten	guonne guonne
	time series, sample autocorrelations from autocorrelations	g13abC
Univariate	time series, partial autocorrelations from autocorrelations	PISACC

Univariate	time series, diagnostic checking of residuals	g13asc
Multivariate	time series, estimation of multi-input model	g13hec
Multivariate	time series, state set and forecasts from fully specified	g13hic
Universite	time series, state set and forecasts from fully specified	g13chc
Multivariate	time series, smoothed sample spectrum using spectral	g13cdc
Multivariate	time series, smoothed sample cross spectrum using	giscac
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 GABCH process	g13fdc
Universite	time series, horecast function for a control process	g13fec
Universite	time series, parameter estimation for an asymmetric	g12ffc
	time series, forecast function for an asymmetric	g13110
Anocates memory to	transfer function model orders	gisbyc
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)	d01sac
Kalman filters, observer Hessenberg	transformation	ol3ewc
Kalman filters, controller Hessenberg	transformation	g13evc
Multiple 1-D real discrete Fourier	transforms	cOffnc
Multiple 1 D Hormitian discrete Fourier	tronsforms	coorpe
Multiple 1 D complex discrete Fourier	transforms	2001qc
Multiple 1-D complex discrete Fourier		CUDITC
	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 (ztbmy)	f06sgc
Matrix-vector product, complex	triangular packed matrix (ztomy)	f06shc
System of equations, complex	triangular matrix (ztrsv)	f06sic
System of equations, complex System of equations, complex	triangular band matrix (ztbsv)	f06skc
System of equations, complex	triangular packed matrix (ztpsy)	f06elc
Matrix_matrix product one real	triangular matrix one real rectangular matrix (d+rmm)	f06vfc
equations with multiple right hand sides real	triangular coefficient matrix (dtrem)	fOGuio
equations with multiple right-hand sides, real	triangular coefficient matrix (dtrsm)	1009]0
orgunations with multiple wight hand sides as well-	triangular coefficient metrix (stram)	100ZIC
equations with multiple right-hand sides, complex	triangular coefficient matrix (ztrsm)	1062]C
Computes a	trimmed and winsorized mean of a single sample with	guidac
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	e04ghc
Switch for taking precautions to avoid	underflow	X02DAC
Santon for tuning precautions to avoid		

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	g05duc
I seudo-random integer nom	unitor in distribution $OB = O^H B$ often	goodyc
Operations with	unitary matrices, compute QB or Q B after	foliac
Operations with	unitary matrices, form columns of Q after	IUIrec
	Univariate time series, generate n terms of either	g05hkc
	Univariate time series, generate n terms of a GARCH	g05hlc
	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, parameter estimation for either	g13fbc
	Universite time series, forecast function for efficiency of the series o	g10100
	Universite time series, parameter estimation for a	g13100
	Univariate time series, forecast function for a GARCH	gisiac
	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 <i>LU</i>	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	undated model	a02ddc
and general inical regression model from	upper and lower tail and probability density function	g02uuc
functiona, aubia anlina internalant, and	upper and lower tail and probability density function	e01bee
functions, cubic spine interpolant, one		eulbac
piecewise cubic Hermite, one	variable	euibec
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 let derivatives	e0/dgc
Conjugate gradient algorithm, function of several	variables using 1st derivatives	-04-b-
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
Porforms canonical	variance on <i>n</i> samples of unequal size	g00010
Further of a fitted birthin with	variate analysis	gubacc
Evaluation of a fitted bicubic spline at a	vector of points	eu2dec
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	g05evc
Pseudo-random multivariate Normal	vector from reference vector	g05ezc
Generates a	vector of pseudo-random numbers from a beta	g05fec
Concretes a	vector of pseudo-random numbers from a gamma	g05ffc
reference a	vector for ARMA time series model with	g05hac
Circular convolution on correlation of terminal	vector for Artivia time series model with	goonac
Orreular convolution or correlation of two real	Vectors	CUDEKC
Shapiro and Wilk's	w test for Normality	gUlddc
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
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Computes (optionally weighted) correlation and covariance matrice	es missing g02bxc
Sharing and Willow to far Namelity	. rank test gooage
Snapiro and Wilk's W test for Normanity	gulaac
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 esti	mates 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 coefficient	ents c02akc
Zeros of a quartic polynomial with real coefficients	cients 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 Lague	rre method c02afc
All zeros of real polynomial, modified Laguerre n	nethod c02agc