

NAG Library Chapter Contents

g01 – Simple Calculations on Statistical Data

g01 Chapter Introduction

| Function Name | Mark of Introduction | Purpose |
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| g01aac | 1 | nag_summary_stats_1var Mean, variance, skewness, kurtosis, etc., one variable, from raw data Note: this function is scheduled for withdrawal at Mark 26, see Advice on Replacement Calls for Withdrawn/Superseded Functions for further information. |
| g01adc | 7 | nag_summary_stats_freq Mean, variance, skewness, kurtosis, etc., one variable, from frequency table |
| g01aec | 6 | nag_frequency_table Frequency table from raw data |
| g01alc | 4 | nag_5pt_summary_stats Five-point summary (median, hinges and extremes) |
| g01amc | 9 | nag_double_quantiles Quantiles of a set of unordered values |
| g01anc | 23 | nag_approx_quantiles_fixed Calculates approximate quantiles from a data stream of known size |
| g01apc | 23 | nag_approx_quantiles_arbitrary Calculates approximate quantiles from a data stream of unknown size |
| g01atc | 24 | nag_summary_stats_onevar Computes univariate summary information: mean, variance, skewness, kurtosis |
| g01auc | 24 | nag_summary_stats_onevar_combine Combines multiple sets of summary information, for use after nag_summary_stats_onevar (g01atc) |
| g01bjc | 4 | nag_binomial_dist Binomial distribution function |
| g01bkc | 4 | nag_poisson_dist Poisson distribution function |
| g01blc | 4 | nag_hypergeom_dist Hypergeometric distribution function |
| g01dac | 7 | nag_normal_scores_exact Normal scores, accurate values |
| g01dcc | 7 | nag_normal_scores_var Normal scores, approximate variance-covariance matrix |
| g01ddc | 4 | nag_shapiro_wilk_test Shapiro and Wilk's W test for Normality |
| g01dhc | 4 | nag_ranks_and_scores Ranks, Normal scores, approximate Normal scores or exponential (Savage) scores |
| g01eac | 4 | nag_prob_normal Probabilities for the standard Normal distribution |
| g01ebc | 1 | nag_prob_students_t Probabilities for Student's t -distribution |
| g01ecc | 1 | nag_prob_chi_sq Probabilities for χ^2 distribution |
| g01edc | 1 | nag_prob_f_dist Probabilities for F -distribution |
| g01eec | 1 | nag_prob_beta_dist Upper and lower tail probabilities and probability density function for the beta distribution |

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| g01efc | 1 | nag_gamma_dist Probabilities for the gamma distribution |
| g01emc | 7 | nag_prob_studentized_range Computes probability for the Studentized range statistic |
| g01epc | 7 | nag_prob_durbin_watson Computes bounds for the significance of a Durbin–Watson statistic |
| g01erc | 7 | nag_prob_von_mises Computes probability for von Mises distribution |
| g01etc | 7 | nag_prob_landau Landau distribution function |
| g01euc | 7 | nag_prob_vavilov Vavilov distribution function |
| g01eyc | 7 | nag_prob_1_sample_ks Computes probabilities for the one-sample Kolmogorov–Smirnov distribution |
| g01ezc | 7 | nag_prob_2_sample_ks Computes probabilities for the two-sample Kolmogorov–Smirnov distribution |
| g01fac | 4 | nag_deviates_normal Deviates for the Normal distribution |
| g01fbc | 1 | nag_deviates_students_t Deviates for Student’s t -distribution |
| g01fcc | 1 | nag_deviates_chi_sq Deviates for the χ^2 distribution |
| g01fdc | 1 | nag_deviates_f_dist Deviates for the F -distribution |
| g01fec | 1 | nag_deviates_beta Deviates for the beta distribution |
| g01ffc | 1 | nag_deviates_gamma_dist Deviates for the gamma distribution |
| g01fmc | 7 | nag_deviates_studentized_range Computes deviates for the Studentized range statistic |
| g01ftc | 7 | nag_deviates_landau Landau inverse function $\Psi(x)$ |
| g01gbc | 6 | nag_prob_non_central_students_t Computes probabilities for the non-central Student’s t -distribution |
| g01gcc | 6 | nag_prob_non_central_chi_sq Computes probabilities for the non-central χ^2 distribution |
| g01gdc | 6 | nag_prob_non_central_f_dist Computes probabilities for the non-central F -distribution |
| g01gec | 6 | nag_prob_non_central_beta_dist Computes probabilities for the non-central beta distribution |
| g01hac | 1 | nag_bivariate_normal_dist Probability for the bivariate Normal distribution |
| g01hbc | 6 | nag_multi_normal Computes probabilities for the multivariate Normal distribution |
| g01hcc | 23 | nag_bivariate_students_t Computes probabilities for the bivariate Student’s t -distribution |
| g01hdc | 24 | nag_multi_students_t Computes the probability for the multivariate Student’s t -distribution |
| g01jcc | 7 | nag_prob_lin_non_central_chi_sq Computes probability for a positive linear combination of χ^2 variables |
| g01jdc | 7 | nag_prob_lin_chi_sq Computes lower tail probability for a linear combination of (central) χ^2 variables |
| g01kac | 9 | nag_normal_pdf Calculates the value for the probability density function of the Normal distribution at a chosen point |

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| g01kfc | 9 | nag_gamma_pdf Calculates the value for the probability density function of the gamma distribution at a chosen point |
| g01kkc | 23 | nag_gamma_pdf_vector Computes a vector of values for the probability density function of the gamma distribution |
| g01kqc | 23 | nag_normal_pdf_vector Computes a vector of values for the probability density function of the Normal distribution |
| g01lbc | 24 | nag_multi_normal_pdf_vector Computes a vector of values for the probability density function of the multivariate Normal distribution |
| g01mbc | 7 | nag_mills_ratio Computes reciprocal of Mills' Ratio |
| g01mtc | 7 | nag_prob_density_landau Landau density function $\phi(\lambda)$ |
| g01muc | 7 | nag_prob_density_vavilov Vavilov density function $\phi_V(\lambda; \kappa, \beta^2)$ |
| g01nac | 7 | nag_moments_quad_form Cumulants and moments of quadratic forms in Normal variables |
| g01nbc | 7 | nag_moments_ratio_quad_forms Moments of ratios of quadratic forms in Normal variables, and related statistics |
| g01ptc | 7 | nag_moment_1_landau Landau first moment function $\Phi_1(x)$ |
| g01qtc | 7 | nag_moment_2_landau Landau second moment function $\Phi_2(x)$ |
| g01rtc | 7 | nag_prob_der_landau Landau derivative function $\phi'(\lambda)$ |
| g01sac | 23 | nag_prob_normal_vector Computes a vector of probabilities for the standard Normal distribution |
| g01sbc | 23 | nag_prob_students_t_vector Computes a vector of probabilities for the Student's t -distribution |
| g01scc | 23 | nag_prob_chi_sq_vector Computes a vector of probabilities for χ^2 distribution |
| g01sdc | 23 | nag_prob_f_vector Computes a vector of probabilities for F -distribution |
| g01sec | 23 | nag_prob_beta_vector Computes a vector of probabilities for the beta distribution |
| g01sfc | 23 | nag_prob_gamma_vector Computes a vector of probabilities for the gamma distribution |
| g01sjc | 23 | nag_prob_binomial_vector Computes a vector of probabilities for the binomial distribution |
| g01skc | 23 | nag_prob_poisson_vector Computes a vector of probabilities for the Poisson distribution |
| g01slc | 23 | nag_prob_hypergeom_vector Computes a vector of probabilities for the hypergeometric distribution |
| g01tac | 23 | nag_deviates_normal_vector Computes a vector of deviates for the standard Normal distribution |
| g01tbc | 23 | nag_deviates_students_t_vector Computes a vector of deviates for Student's t -distribution |
| g01tcc | 23 | nag_deviates_chi_sq_vector Computes a vector of deviates for χ^2 distribution |
| g01tdc | 23 | nag_deviates_f_vector Computes a vector of deviates for F -distribution |
| g01tec | 23 | nag_deviates_beta_vector Computes a vector of deviates for the beta distribution |

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| g01tfc | 23 | nag_deviates_gamma_vector Computes a vector of deviates for the gamma distribution |
| g01wac | 24 | nag_moving_average Computes the mean and standard deviation using a rolling window |
| g01zuc | 7 | nag_init_vavilov Initialization function for nag_prob_density_vavilov (g01muc) and nag_prob_vavilov (g01euc) |
