$$x = \begin{cases} a + \sqrt{cdf(b-a)(c-a)} & 0 \le cdf \le \dfrac{c-a}{b-a} \\[3mm] b - \sqrt{(1-cdf)(b-a)(b-c)} & \dfrac{c-a}{b-a} \le cdf \le 1 \end{cases}$$

where $a<c<b$.

See Also

Chapter III-12, **Statistics** for a function and operation overview; the **StatsTriangularCDF** and **StatsTriangularPDF** functions.

StatsInvUSquaredCDF

StatsInvUSquaredCDF(*cdf*, *n*, *m*, *method*, *useTable*)

The StatsInvUSquaredCDF function returns the inverse of Watson's U^2 cumulative distribution function integer sample sizes n and m. Use a nonzero value for *useTable* to search a built-in table of values. If n and m cannot be found in the table, it will proceed according to *method*:

method	What It Does
0	Exact computation using Burr algorithm (could be slow).
1	Tiku approximation using chi-squared.
2	Use built-in table only and return a NaN if not in table.

For large n and m, consider using the Tiku approximation. To abort execution, press the **User Abort Key Combinations**. Because n and m are interchangeable, n should always be the smaller value. For $n>8$ the upper limit in the table matched the maximum that can be computed using the Burr algorithm. There is no point in using method 0 with m values exceeding these limits.

The inverse is obtained from precomputed tables of Watson's U^2 (see **StatsUSquaredCDF**).

Note: Table values are different from computed values. These values use more conservative criteria than computed values. Table values are more consistent with published values because the U^2 distribution is a highly irregular function with multiple steps of arbitrary sizes. The standard for published tables provides the X value of the next vertical transition to the one on which the specified P is found. See **StatsInvFriedmanCDF**.

References

Burr, E.J., Small sample distributions of the two sample Cramer-von Mises' W^2 and Watson's U^2, *Ann. Mah. Stat. Assoc.*, *64*, 1091-1098, 1964.

Tiku, M.L., Chi-square approximations for the distributions of goodness-of-fit statistics, *Biometrica*, *52*, 630-633, 1965.

See Also

Chapter III-12, **Statistics** for a function and operation overview; the **StatsWatsonUSquaredTest** and **StatsUSquaredCDF** functions.

StatsInvVonMisesCDF

StatsInvVonMisesCDF(*cdf*, *a*, *b*)

The StatsInvVonMisesCDF function returns the numerically evaluated inverse of the von Mises cumulative distribution function where the value of the integral of the distribution matches *cdf*. Parameters are as for **StatsVonMisesCDF**.

References

Evans, M., N. Hastings, and B. Peacock, *Statistical Distributions*, 3rd ed., Wiley, New York, 2000.