StatsInvQCDF

StatsInvQCDF(*cdf*, *r*, *c*, *df*)

The StatsInvQCDF function returns the critical value of the Q cumulative distribution function for *r* the number of groups, *c* the number of treatments, and *df* the error degrees of freedom ($df=r*c*(n-1)$ with sample size *n*).

Details

The Q distribution is the maximum of several Studentized range statistics. For a simple Tukey test, use *r*=1.

Examples

The critical value for a Tukey test comparing 5 treatments with 6 samples and 0.05 significance is:

```
Print StatsInvQCDF(1-0.05,1,5,5*(6-1))
```

See Also

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

StatsInvQpCDF

StatsInvQpCDF(*ng*, *nt*, *df*, *alpha*, *side*, *sSizeWave*)

The StatsInvQpCDF function returns the critical value of the Q' cumulative distribution function for *ng* the number of groups, *nt* the number of treatments, and *df* the error degrees of freedom. *side*=1 for upper-tail or *side*=2 for two-tailed critical values.

sSizeWave is an integer wave of *ng* columns and *nt* rows specifying the number of samples in each treatment. If *sSizeWave* is a null wave ($**""**) StatsInvQpCDF computes the number of samples from $df=ng*nt*(n-1)$ with *n* truncated to an integer.

Details

StatsInvQpCDF is a modified Q distribution typically used with Dunnett's test, which compares the various means with the mean of the control group or treatment.

StatsInvQpCDF differs from other StatsInv*XXX* functions in that you do not specify a *cdf* value for the inverse (usually 1-*alpha* for the critical value). Here *alpha* selects one- or two-tailed critical values.

It is computationally intensive, taking longer to execute for smaller *alpha* values.

Examples

The critical value for a Dunnett test comparing 4 treatments with 4 samples and (upper tail) 0.05 significance is:

```
// n=4 because 12=1*4*(4-1).
Print StatsInvQpCDF(1,4,12,0.05,1,$"")
  2.28734
```

See Also

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

StatsInvRayleighCDF

StatsInvRayleighCDF(*cdf* [, *s* [, *m*]])

The **StatsInvRayleighCDF** function returns the inverse of the Rayleigh cumulative distribution functiongiven by

$$x = \mu + \sigma\sqrt{-2\ln(1-cdf)},$$

with defaults *s*=1 and *m*=0. It returns NaN for $s \leq 0$ and zero for $x \leq m$.

See Also

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