How do I use the F.INV.RT function in Excel?

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The F.INV.RT function in Excel is a mathematical tool that allows users to calculate the inverse of the cumulative distribution function for the F-distribution. This function is commonly used in statistical analysis to determine critical values for hypothesis testing or confidence intervals. To use the F.INV.RT function, simply enter the probability and degrees of freedom values as arguments, and the function will return the corresponding inverse value. This allows users to quickly and accurately calculate critical values without having to manually look them up in a table. Overall, the F.INV.RT function is a valuable tool for users looking to perform statistical analysis in Excel.

This article describes the formula syntax and usage of the **F.INV.RT** function in Microsoft Excel.

Returns the inverse of the (right-tailed) F probability distribution. If p = F.DIST.RT(x,...), then F.INV.RT(p,...) = x. The F distribution can be used in an F-test that compares the degree of variability in two data sets. For example, you can analyze income distributions in the United States and Canada to determine whether the two countries have a similar degree of income diversity.

Syntax

F.INV.RT(probability,deg_freedom1,deg_freedom2)

The F.INV.RT function syntax has the following arguments:

Probability Required. A probability associated with the F cumulative distribution.

Deg_freedom1 Required. The numerator degrees of freedom.

Deg_freedom2 Required. The denominator degrees of freedom.

Remarks

If any argument is non-numeric, F.INV.RT returns the #VALUE! error value.

If Probability is < 0 or probability is > 1, F.INV.RT returns the #NUM! error value.

If Deg_freedom1 or Deg_freedom2 is not an integer, it is truncated.

If Deg_freedom1 is < 1, or Deg_freedom2 is < 1, F.INV.RT returns the #NUM! error value.

If Deg_freedom2 is < 1 or Deg_freedom2 is ≥ 10^10, F.INV.RT returns the #NUM! error value.

F.INV.RT can be used to return critical values from the F distribution. For example, the output of an ANOVA calculation often includes data for the F statistic, F probability, and F critical value at the 0.05 significance level. To return the critical value of F, use the significance level as the probability

argument to F.INV.RT.

Given a value for probability, F.INV.RT seeks that value x such that F.DIST.RT(x, deg_freedom1, deg_freedom2) = probability. Thus, precision of F.INV.RT depends on precision of F.DIST.RT. F.INV.RT uses an iterative search technique. If the search has not converged after 64 iterations, the function returns the #N/A error value.

Example

Copy the example data in the following table, and paste it in cell A1 of a new Excel worksheet. For formulas to show results, select them, press F2, and then press Enter. If you need to, you can adjust the column widths to see all the data.

Data	**Description**	
0.01	Probability associated with the F cumulative distribution	
6	Numerator degrees of freedom	
4	Denominator degrees of freedom	
Formula	**Description**	**Result**
=F.INV.RT(A2,A3,A4)	Inverse of the F probability distribution for the terms above	15.20686