

How can I use the FINV function in Excel to calculate the inverse of the F probability distribution?

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The FINV function in Excel is a useful tool for calculating the inverse of the F probability distribution. This function allows users to find the critical value of the F distribution for a given significance level and degrees of freedom. By inputting the desired probability and degrees of freedom, the FINV function will return the corresponding critical value. This can be helpful in statistical analysis and hypothesis testing, as it allows users to determine the appropriate F value to use for a given probability level. By using the FINV function, users can easily and accurately calculate the inverse of the F probability distribution in Excel.

Returns the inverse of the (right-tailed) F probability distribution. If $p = \text{FDIST}(x, \dots)$, then $\text{FINV}(p, \dots) = x$.

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.

Important: This function has been replaced with one or more new functions that may provide improved accuracy and whose names better reflect their usage. Although this function is still available for backward compatibility, you should consider using the new functions from now on, because this function may not be available in future versions of Excel.

For more information about the new functions, see [F.INV function](#) and [F.INV.RT function](#).

Syntax

`FINV(probability,deg_freedom1,deg_freedom2)`

The FINV 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 nonnumeric, FINV returns the #VALUE! error value.

If probability < 0 or probability > 1, FINV returns the #NUM! error value.

If deg_freedom1 or deg_freedom2 is not an integer, it is truncated.

If $\text{deg_freedom1} < 1$ or $\text{deg_freedom1} \geq 10^{10}$, FINV returns the #NUM! error value.

If $\text{deg_freedom2} < 1$ or $\text{deg_freedom2} \geq 10^{10}$, FINV returns the #NUM! error value.

FINV 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 FINV.

Given a value for probability, FINV seeks that value x such that $\text{FDIST}(x, \text{deg_freedom1}, \text{deg_freedom2}) = \text{probability}$. Thus, precision of FINV depends on precision of FDIST. FINV uses an iterative search technique. If the search has not converged after 100 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
=FINV(A2,A3,A4)	Inverse of the F probability distribution for the terms above	15.206865