How to Find the F Critical Value in Excel Easily

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The process for finding the F Critical Value in Excel involves using the F.INV.RT function, which calculates the inverse of the right-tailed F probability distribution. This function requires three inputs: the desired probability level, the degrees of freedom for the numerator, and the degrees of freedom for the denominator. By inputting these values into the function, Excel will return the corresponding F Critical Value. This value is important in statistical analysis, as it helps determine if the observed F statistic is statistically significant or not. Additionally, the F Critical Value can also be found using the F Distribution Table, but using the F.INV.RT function in Excel can provide a more precise and efficient calculation.

Find the F Critical Value in Excel

When you conduct an F test, you will get an F statistic as a result. To determine if the results of the F test are statistically significant, you can compare the F statistic to an F critical value. If the F statistic is greater than the F critical value, then the results of the test are statistically significant.

The F critical value can be found by using an or by using statistical software.

To find the F critical value, you need:

A significance level (common choices are 0.01, 0.05, and 0.10)Numerator degrees of freedomDenominator degrees of freedom

Using these three values, you can determine the F

critical value to be compared with the F statistic.

How to Find the F Critical Value in Excel

To find the F critical value in Excel, you can use the F.INV.RT() function, which uses the following syntax:

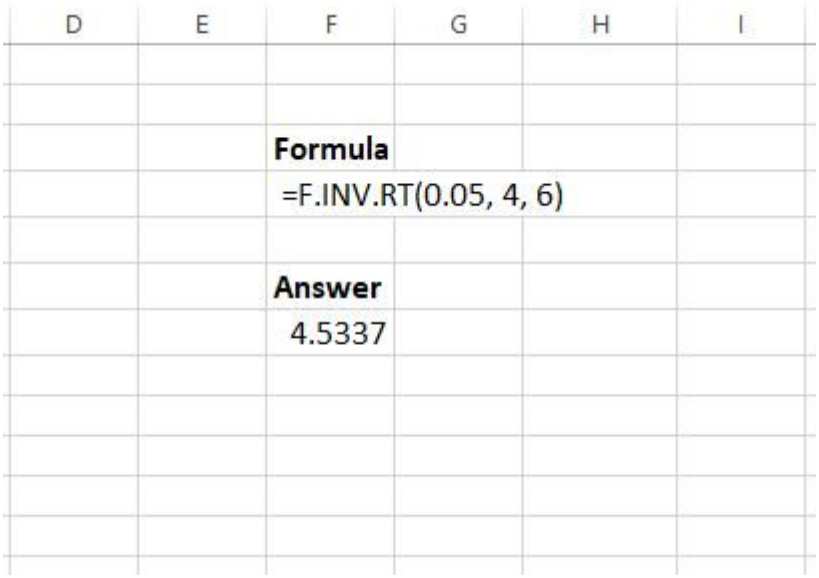
F.INV.RT(probability, deg_freedom1, deg_freedom2)

probability: The significance level to usedeg_freedom1: The numerator degrees of freedomdeg_freedom2: The denominator degrees of freedom

This function returns the critical value from the F distribution based on the significance level, numerator degrees of freedom, and denominator degrees of freedom provided.

For example, suppose we would like to find the F critical value for a significance level of 0.05, numerator degrees of freedom = 4, and denominator degrees of freedom = 6.

In Excel, we can type the following formula: F.INV.RT(0.05, 4, 6)



This returns the value 4.5337. This is the critical value for a significance level of 0.05, numerator degrees of freedom = 4, and denominator degrees of freedom = 6.

Note that this also matches the number we would find in the with α = 0.05, DF1 *(numerator degrees of freedom)* = 4, and DF2 *(denominator degrees of freedom)* = 6.

	DF1	α = 0.05								
DF2	1	2	3	4	5	6	7	8	9	10
1	161.45	199.5	215.71	224.58	230.16	233.99	236.77	238.88	240.54	241.88
2	18.513	19	19.164	19.247	19.296	19.33	19.353	19.371	19.385	19.396
3	10.128	9.5521	9.2766	9.1172	9.0135	8.9406	8.8867	8.8452	8.8123	8.7855
4	7.7086	6.9443	6.5914	6.3882	6.2561	6.1631	6.0942	6.041	5.9988	5.9644
5	6.6079	5.7861	5.4095	5.1922	5.0503	4.9503	4.8759	4.8183	4.7725	4.7351
6	5.9874	5.1433	4.7571	4.5337	4.3874	4.2839	4.2067	4.1468	4.099	4.06
7	5.5914	4.7374	4.3468	4.1203	3.9715	3.866	3.787	3.7257	3.6767	3.6365
8	5.3177	4.459	4.0662	3.8379	3.6875	3.5806	3.5005	3.4381	3.3881	3.3472
9	5.1174	4.2565	3.8625	3.6331	3.4817	3.3738	3.2927	3.2296	3.1789	3.1373
10	4.9646	4.1028	3.7083	3.478	3.3258	3.2172	3.1355	3.0717	3.0204	2.9782
11	4.8443	3.9823	3.5874	3.3567	3.2039	3.0946	3.0123	2.948	2.8962	2.8536
12	4.7472	3.8853	3.4903	3.2592	3.1059	2.9961	2.9134	2.8486	2.7964	2.7534
13	4.6672	3.8056	3.4105	3.1791	3.0254	2.9153	2.8321	2.7669	2.7144	2.671
14	4.6001	3.7389	3.3439	3.1122	2.9582	2.8477	2.7642	2.6987	2.6458	2.6022
15	4.5431	3.6823	3.2874	3.0556	2.9013	2.7905	2.7066	2.6408	2.5876	2.5437

Cautions on Finding the F Critical Value in Excel

If any argument is non-numeric.If the value for *probability* is less than zero or greater than 1.If the value for *deg_freedom 1* or *deg_freedom2* is less than 1.