

CFO Resources – Software Tip- AND,OR, NOT

AND, OR and NOT

And, OR and Not are considered logical functions and are usually found nested in other formulas such as an IF. The three functions return either a True or False, which can be used in other calculations to continue a calculation or decision.

The syntax for these three functions is
Function (logical1, logical2....)

- ❖ **And** tests whether all the arguments are TRUE
- ❖ **OR** tests if any of the arguments are TRUE
- ❖ **Not** tests whether the criterion is not true – for a single test

AND as well as OR allow you to test up to **30** conditions while NOT only allows for one variable or one test

For example, I would use the following nested function of IF and AND if I wanted to see if my customer qualified for a discount. To qualify the coffee beans had to be from Tanzania (C8) and the purchase had to be ≥ 50 (e8). If both cells met the criteria than the resulting answer would calculate the new price after discount.

The screenshot shows an Excel spreadsheet with the following data:

Customer	Date	Product	Price/lb	Quantity Sold	Total Sales	Final Sales after Discount	Net Discount
Starbucks	8/1/2000	Tanzania	4.99	75			.25
Barneys	8/1/2000	Tanzania	4.99	10			49.9
Java Joe	8/1/2000	Tanzania					
Smokin' Si	8/1/2000	Tanzania					
Starbucks	8/1/2000	French Ro					
Barneys	8/1/2000	French Ro					
Java Joe	8/1/2000	French Ro					
Smokin' Si	8/1/2000	French Ro					
Starbucks	8/1/2000	Blue Hawa					
Barneys	8/1/2000	Columbian					
Java Joe	8/1/2000	Columbian					
Smokin' Si	8/1/2000	Columbian					
Starbucks	8/1/2000	Columbian					

The formula bar shows: `=IF(AND(C8="Tanzania",E8>=50),F8*90%,F8)`

The 'Function Arguments' dialog box for the AND function is open, showing:

- Logical1: C8="Tanzania" = TRUE
- Logical2: E8>=50 = TRUE
- Logical3: = logical

The dialog box also includes the text: "Checks whether all arguments are TRUE, and returns TRUE if all arguments are TRUE." and "Logical2: logical1,logical2,... are 1 to 30 conditions you want to test that can be either TRUE or FALSE and can be logical values, arrays, or references."

Excel Tip: Enter the True/False pieces first and then do the test!