MS 365 Excel Basics #2

Adding & Counting with Functions like SUMIFS, COUNTIFS, COUNT, ROWS and IF

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COUNT, COUNTA, ROWS, SUM, SUMIFS, COUNTIFS & IF functions

- COUNT function: Counts numbers in an array or range of cells and ignores text, logicals, errors and empty cells.
 COUNT(value1, [value2], ...)
 - value1 Required. The first item, cell reference, or range within which you want to count numbers.
 - value2, ... Optional. Up to 255 additional items, cell references, or ranges within which you want to count numbers.
- **COUNTA** function: Count all the cells that are not empty in an array or range of cells.
 - COUNTA(value1, [value2], ...)
 - value1 Required. The first argument representing the values that you want to count.
 - value2, ... Optional. Additional arguments representing the values that you want to count, up to a maximum of 255 arguments.
- **ROWS** function: Counts number of rows in an array or range of cells.
 - o ROWS(array)
 - Array Required. An array, an array formula, or a reference to a range of cells for which you want the number of rows.
 - Example: ROWS(B3:B7) = 5 because the range spans the rows: 3, 4, 5, 6, 7.
- **SUM** function adds numbers from an array or range of cells.
 - SUM(number1, [number2], ...) = adds numbers to get a total.
 - number1 Required. The first number, cell reference, or range for which you want the average.
 - number2, ...Optional. Additional numbers, cell references or ranges for which you want the average, up to a maximum of 255.
- **COUNTIFS** function: Counts just some of the items in a range of cells based on a condition of set of criteria. Can count with 1 or more conditions/criteria.
 - COUNTIFS(criteria_range1, criteria1, [criteria_range2, criteria2]...)
 - criteria_range1 The first range with the items that you want to match to the value you enter into criteria1
 - criteria1 argument contains the condition or criteria that tells the function what to count.
 Conditions and criteria can be numbers, text, logical, such as 10/23/2025, 500, >500, Luong.
 - [criteria_range2, criteria2]... Optional pairs of range and criteria that allow you to count based on an AND Logical Test. Up to 127 pairs of ranges and criteria.
- **SUMIFS** function: Add just some of the numbers in a range based on a condition of set of criteria. Can add with 1 or more conditions/criteria.
 - SUMIFS(sum_range, criteria_range1, criteria1, [criteria_range2, criteria2], ...)
 - sum_range ... Contains the range with the numbers that you want to add.
 - criteria_range1 The first range with the items that you want to match to the value you enter into criteria1
 - criteria1 argument contains the condition or criteria that tells the function what to count.
 Conditions and criteria can be numbers, text, logical, such as 10/23/2025, 500, >500, Luong.
 - [criteria_range2, criteria2]... Optional pairs of range and criteria that allow you to count based on an AND Logical Test. Up to 127 pairs of ranges and criteria.
- IF function: Returns a value based on a TRUE or FALSE from a logical test. The IF function delivers one value when the logical test evaluates to TRUE and a different value when the logical test evaluates to FALSE.
 - =IF(logical_test, [value_if_true], [value_if_false])
 - logical_test Contains a single logical test or an array logical test.
 - value_if_true This is the value that is delivered if the logical test evaluates to TRUE.
 - value_if_false This is the value that is delivered if the logical test evaluates to FALSE.

UNIQUE array function

The UNIQUE array function can deliver either a distinct set of items or a unique set of items from a table, a column, or a row:

•A *distinct* set of items has all duplicates in the set removed, leaving only one of each item.

•A *unique* set of items lists only items that occur exactly one time in the dataset.

Note: In everyday language, when people say they want a unique list, they are asking for a set of items that has all duplicates in the set removed, leaving only one of each item. Microsoft chose the term distinct to represent this action, rather than unique.

The UNIQUE function has the following syntax (see Figure 3.18):

```
UNIQUE(array, [by_col], [exactly_once])
```

The arguments of the UNIQUE function are as follows:

•array: This argument contains the table, column, or row that you want to filter:

- When you provide a table, the function generates a unique/distinct set of records.
- When you provide a column, the function generates a unique/distinct list of items in a column.
- When you provide a row, the function generates a unique/distinct list of items in a row.

•[by_col]: This argument can take one of two possible values:

- TRUE or 1: Returns all unique/distinct columns from the array.
- FALSE or omitted or 0: Returns all unique/distinct rows from the array. This the default.

•[exactly_once]: This argument can take one of two possible values:

- TRUE or 1: Returns a unique set as defined above.
- $\circ~$ FALSE or 0 or omitted: Returns a distinct set as defined above.



Figure 3.18 Arguments of the UNIQUE array function.

SORT array function

The SORT array function can sort a row, a column, or a table in ascending or descending order. It can also sort by more than one column. The SORT function has the following syntax (see Figure 3.24):

SORT(array, [sort_index], [sort_order], [by_col])

The arguments of the SORT function are as follows:

- •array: This argument contains the table, column, or row that is the source data.
- •[sort_index]: You use this argument when you have more than two columns or rows and you want to specify which column or row should be used for sorting. This argument indicates the relative position of the column or columns that you want to sort by. When this argument is omitted, if you are sorting a table by rows, the first column in the table is used to sort the records; if you are sorting a table by columns, the first row in the table is used to sort the records. Consider these examples:
 - Sort by column 2: =SORT(D5:E10,2)
 - Sort by column 1 and then by column 3: =SORT(C5:E10, $\{1,3\}$)

•[*sort_order*]: This argument can take the following values:

- o 1 or omitted: A–Z, or smallest-to-largest, sort. This is the default.
- -1: Z–A, or largest-to-smallest, sort.
- If you want to sort two or more columns, each with a different sort, use array syntax, such as =SORT(C5:E10,{3,1},{1,-1}), where column 3 gets an A-Z sort and column 1 gets a Z-A sort.
- [by_col]: This argument can take one of two values:
 - TRUE: Sort by columns. Use this option when you are sorting a row of values.
 - $\circ\;$ FALSE or omitted: Sort by rows. Use this option when you are sorting a column. This is the default.



Figure 3.24 Arguments in the SORT array function.

Examples on Next Page:

	Α	В	С	D	E	F	G	Н	1
1									
2	l	Date	SalesRep	Sales (\$)		COUNT	COUNTA	ROWS	SUM
3		10/23/2025	Luong	100	D	Counts Numbers	Counts cells not empty	Counts rows in a range	Adds numbers
4		10/23/2025	Sioux	200	D	Count ALL Numbers	Count ALL Words	Counts ALL Rows	Sum ALL Numbers
5		10/24/2025	Chantel	100	D	17	18	18	6200
6		10/24/2025	Luong	300	D	=COUNT(D3:D20)	=COUNTA(C3:C20)	=ROWS(D3:D20)	=SUM(D3:D20)
7		10/24/2025	Luong						
8		10/23/2025	Chantel	100	D	**When you specify a "crite	eria" or "condition" you are saying: "don't make the		
9		10/24/2025	Sioux	200	D	calculation on all the items,	, just on some of the items".		
10		10/24/2025	Sioux	500	D				_
11		10/23/2025	Sioux	200	D		COUNTIFS	SUMIFS	
12		10/23/2025	Luong	500	D		Count w/ 1 or more criteria	Add w/ 1 or more criteria	
13		10/23/2025	Sioux	300	D	Criteria	Count number of sales that Chantel made	Adds the sales that Chantel made	
14		10/24/2025	Chantel	500	D	Chantel	6	2300	
15		10/24/2025	Chantel	700	D		=COUNTIFS(C3:C20,F14)	=SUMIFS(D3:D20,C3:C20,F14)	
16		10/24/2025	Luong	800	D				
17		10/23/2025	Chantel	400	D	Criteria	Count the number of sales made on 10/24/2025	Add sales made on 10/24/2025	
18	L	10/24/2025	Sioux	400	D	10/24/2025	10	4000	
19		10/24/2025	Chantel	500	D		=COUNTIFS(B3:B20,F18)	=SUMIFS(D3:D20,B3:B20,F18)	m
20		10/23/2025	Luong	400	D				
21						Goal: Create SalesRep Sales	Report:		
22									
23						SORT			
24						Sorts A-Z or Z-A		-	
25						UNIQUE	SUM		
26						Creates a unique list	Adds numbers		
27						SalesRep	Sales (\$)		
28						Chantel	2,300		
29						Luong	2,100		
30						Sioux	1,800		
31								J	
32						F28: =UNIQUE(SORT(C3:C20	0))		
33							G28: =SUMIFS(D3:D20,C3:C20,F28#)		

Excel's Golden Rule

- If a formula input can change, put it in a cell, label it, and refer to it in the formula with a cell reference. If the input will never change, like 24 hours in a day, then you can hard code it into formula.
 - Examples of formula inputs that can change: SalesRep name like: Luong, Sales amount like: 100, Tax Rates like: 0.0375 or 3.75%, Sales Hurdles like: >500.
 - Examples of formula inputs that will not change: Months in a year = 12, Hours in a day = 24, Days in a week = 7.

Before:

	Α	В	С	D	E	F	G	Н	1	J	K
1											
2		Date	SalesRep	Sales (\$)		Goal:					
3		10/23/2025	Luong	100		1) Create an Excel solution that c	ounts how ma	any sales Ch	nantel mad	le.	
4	8	10/23/2025	Sioux	200	(2)	2) Add sales for the day 10/24/20	025.				
5	2	10/24/2025	Chantel	100							-
6	8	10/24/2025	Luong	300							
7		10/24/2025	Luong								
8		10/23/2025	Chantel	100							
9		10/24/2025	Sioux	200							
10		10/24/2025	Sioux	500							
11		10/23/2025	Sioux	200							
12		10/23/2025	Luong	500							
13		10/23/2025	Sioux	300	10	w					
14		10/24/2025	Chantel	500		Goal:					
15		10/24/2025	Chantel	700		If the insurances expanse for the	year is \$3,000	D, and the c	ompany re	cords	
16	8	10/24/2025	Luong	800		the same amount for each montl	h, what is the	monthly in:	surance ex	pense?	s
17	25	10/23/2025	Chantel	400	10						5) ()
18		10/24/2025	Sioux	400							
19		10/24/2025	Chantel	500							
20		10/23/2025	Luong	400							
21											

After completing the problem and following Excel's Golden Rule:

	А	В	С	D	E	F	G	Н	Ĩ	J	К				
1															
2		Date	SalesRep	Sales (\$)	60 E	Goal:									
3		10/23/2025	Luong	100		1) Create an Excel solution that (counts how ma	any sales Cl	hantel mad	e.					
4		10/23/2025	Sioux	200		2) Add sales for the day 10/24/2	Add sales for the day 10/24/2025.								
5		10/24/2025	Chantel	100											
6		10/24/2025	Luong	300											
7		10/24/2025	Luong	-		SalesRep	Chantel								
8	8	10/23/2025	Chantel	100		Number sales Chantel made	6		=COUNTIFS	s(C3:C20,G	7)				
9	2	10/24/2025	Sioux	200			-								
10	8	10/24/2025	Sioux	500		Date	10/24/2025								
11		10/23/2025	Sioux	200		Total sales on 10/24/2025	4000		=SUMIFS(E	03:D20,B3:I	320,G10)				
12	I	10/23/2025	Luong	500											
13		10/23/2025	Sioux	300							24				
14		10/24/2025	Chantel	500		Goal:									
15		10/24/2025	Chantel	700		If the insurances expanse for the	e year is \$3,000), and the c	ompany re	cords					
16		10/24/2025	Luong	800		the same amount for each mont	th, what is the	monthly in	surance ex	pense?					
17		10/23/2025	Chantel	400											
18		10/24/2025	Sioux	400		Year Insurance Expense	3,000.00								
19	2	10/24/2025	Chantel	500		Monthly Insurance Expense	250.00		=G18/12						
20	2	10/23/2025	Luong	400											
21	['				22										

\$ Sign Number Formatting

- General Number Formatting:
 - General Number Formatting = What you see is what is in the cell.
 - o General Number Formatting ERASES all previously applied Number Formatting.
- Accounting Number Format:
 - Fixed dollar sign (left edge of cell).
 - Negatives are in parenthesis.
 - o Zeros are dashes.
 - Decimals always line up.
- Currency:
 - Floating dollar sign.
 - You choose how to show negatives.
 - Zeros are zeros.
 - Decimals usually line up.
- Example:

General	Currency	Accounting	g
Sales	Sales	Sales	
45	\$45.00	\$ 45.0	0
0	\$0.00	\$-	
78.99	\$78.99	\$ 78.9	9
100	\$100.00	\$ 100.0	0
-101	-\$101.00	\$ (101.0	0)
98.2	\$98.20	\$ 98.2	0
20	\$20.00	\$ 20.0	0

SEQUENCE Array Function

- The SEQUENCE Array Function generates a sequence of numbers in a row, a column, or a table, based on a start value and an increment value (step).
 - SEQUENCE(rows, [columns], [start], [step])
 - Rows requires the number of rows you want in the sequence of numbers.
 - [columns] requires the number of columns you want in the sequence of numbers.
 - [start] requires the start number for the the sequence of numbers.
 - [step] requires the step, or increment between each number in the sequence of numbers

AND Logical Test

	Α	В	С	D	E	F	G	Н	1						
1		Single condition logical test: Mom says: "If you take out the garbage, you get dessert".													
2	ż	Single condition log	gical test: Mom	i says: If you	take out	the garbage, you get de	essert.								
3		Two condition logical texts Mom caves "If you take out the garbage AND clean the table you get dessert"													
5		I we condition logical test: wom says: "If you take out the garbage AND clean the table, you get dessert".													
6	8	If "take out garbage	e" = IRUE AND) "clean the f	table" = I	RUE, you get dessert									
/		IKUE, IKUE = you get dessert													
9		AND Logical Test =													
10		Two or more logical tests are used to test whether to count or add an item. All tests must be met, for the item to be included.													
12		Four possibilities for an AND Logical Test: "If you take out the garbage AND clean the table, you get dessert".													
13		TRUE, TRUE = TRUE = you get dessert													
14		TRUE, FALSE = FALS	E = No desser	t											
15		FALSE, TRUE = FALS	E = No desser	t											
16		FALSE, FALSE = FALS	SE = No desser	rt											
17		Goal: Count sales on 10/23/2025 made by Luong													
19		The AND Logical Test is:													
20		the Date Field must contain 10/23/2025													
21		AND													
22			the S	alesRep Field	must cor	ntain a number that is L	uong.								
24		Criteria:		27					505 1						
25		Date	SalesRep												
26		10/23/2025	Luong												
28		In Order to Count T	The Record, you	Must Get Tv	NO TRUE	1111									
30		Date	SalesRep	Sales (\$)	13										
31		10/23/2025	Sioux	200											
32		10/23/2025	Chantel	100											
33		10/24/2025	Luong	300	2										
34		10/23/2025	Luong	100											
36		AND Logical Test m	nust get Two TR	RUEs:											
38		Date	SalesRep	Sales (\$)											
39		TRUE FALSE X													
40		TRUE FALSE X													
41		FALSE	TRUE	Х											
42		TRUE	TRUE	~	Cou	nt sales on 10/23/2025	made by Luong = 1	1							

SUMIFS & COUNTIFS with 2 Conditions in an AND Logical Test

A	B	C	D	E	F
43	and the second se				
44	Date	SalesRep	Sales (\$)	SU	MIFS and COUNTIFS (or
45	10/23/202	5 Luong	100		
46	10/23/202	5 Sioux	200	Exa	ample:
47	10/26/202	5 Bree	900	AN	D Logical Test is:
48	10/24/202	5 Chantel	100		
49	10/24/202	5 Luong	300	Dat	te
50	10/24/202	5 Luong		Sal	esRep
51	10/23/202	5 Chantel	100	Co	unt with 2 criteria
52	10/26/202	5 Bree	800	Sur	m with 2 criteria
53	10/24/202	5 Sioux	200	6	manarativo Operatoro
54	10/24/202	5 Sioux	500	CO	Equal one two thing
55	10/23/202	5 Sioux	200	-	Equal: are two thing
56	10/23/202	5 Luong	500		Not: are two things
57	10/23/202	5 Sioux	300		Greater than: is the
58	10/24/202	5 Chantel	500	>=	 Greater than or equal
59	10/24/202	5 Chantel	700		Less than: is the thin
60	10/24/202	5 Luong	800	<=	= Less than or equal to
61	10/23/202	5 Chantel	400	Exa	ample:
62	10/24/202	5 Sioux	400	AN	D Logical Test is:
63	10/26/202	5 Bree	700		
64	10/24/202	5 Chantel	500	Dat	te
65	10/23/202	5 Luong	400	Sal	es
66				Co	unt with 2 criteria
67				Sur	m with 2 criteria
68					

69

ther ...IFS too) perform AND Logical Tests by defult

G

Count sales on 10/23/2025 made by Luong

Н

Date = 10/23/2025 AND SalesRep = Luong

Date	10/23/2025
SalesRep	Luong
Count with 2 criteria	3
Sum with 2 criteria	1000

G51: =COUNTIFS(B45:B65,G49,C45:C65,G50) G52: =SUMIFS(D45:D65,B45:B65,G49,C45:C65,G50)

T

s equal?

not equal? Type less than symbol, then greater than symbol.

thing on the left greater than the thing on the right?

al to: is the thing on the left greater than or equal to the thing on the right?

g on the left less than the thing on the right?

: is the thing on the left less than or equal to the thing on the right?

Count Sales on 10/24/2025 that were greater than or equal to 500 Date = 10/24/2025 AND Sales >= 500

Date	10/24/2025
Sales	>=500
Count with 2 criteria	5
Sum with 2 criteria	3000

G66: =COUNTIFS(B45:B65,G64,D45:D65,G65) G67: =SUMIFS(D45:D65,B45:B65,G64,D45:D65,G65)

Comparative Operators

ļ	A B	С	D	E	F	G	Н	1		J	К	L	М	Ν
2	Comparat	ive Operato	rs:		°	÷								
3	=	Equal: are t	wo things equ	ial?								1		
4	<>	Not Equal: a	are two things	not e	equal. Type less than symbol, th	hen greater than sym	bol					1		
5	>	Greater tha	n: is the thing	on th	ne left greater than the thing or	n the right?						1		
6	>=	Greater tha	n or equal to:	is the	thing on the left greater than	or equal to the thing	on the right?]		
7	<	Less than: is	s the thing on	the le	eft less than the thing on the rig	ght?						1		
8	<=	Less than o	r equal to: is t	he th	ing on the left less than or equa	al to the thing on the	right?							
10	There a	are three	situatior	ns w	here we can use com	parative oper	ators in wo	orksh	eet fo	rmulas:				
12	Date													
13	3 10/23/25 Luong 100 You can type the comparative operator and the number into the cell.													
14	4 10/23/25 Sioux 200 The comparative operator and number are considered a text value, which works in COUNTIFS and other													
15	5 10/26/25 Bree 900 Microsoft programmed the COUNTIFS and other IFS functions to understand a comparative operator ar												ext values.	
16	6 10/24/25 Chantel 100 Use this method when the hurdle number will not be used as a number in other formulas													
17	17 10/24/25 Luong 300													
18	10/24/25	Luong			Example:	Count Sales on 10/2	4/2025 that we	ere grea	ater than	or equal to 50	0			
19	10/23/25	Chantel	10	0	AND Logical Test is:	Date = 10/24/2025	AND Sales >=!	500						
20	10/26/25 Bree 800												arative oper	rator
21	10/24/25 Sioux 200 Date 10/24/2025 and the number into the cell a												ue.	
22	10/24/25	Sioux	50	00	Sales Hurdle	>=500 🔶								
23	10/23/25	Sioux	20	0	Count with 2 criteria	5	=COUNTIFS	6(D13:D	33,G22,E	313:B33,G21)				
24	10/23/25	Luong	50	0										
25	10/23/25	Sioux	30	0	2) COUNTIFS, SUMIFS and oth	ner IFS function optic	ons #2: Join tex	t com	parative	operator wit	th number in	criteria a	rgument	
26	10/24/25	Chantel	50	0	When the hurdle number is	used as a number in o	other formulas,	then y	ou canno	ot type the				
27	10/24/25	Chantel	70	0			compara	tive op	erator ar	nd number into	o a cell as a tex	kt value.		
28	10/24/25	Luong	80	0	When this is the case, you	can use the ampersa	nd to join a com	nparativ	e operat	tor in quotes to	o the cell with	the numbe	er in the	
29	10/23/25	Chantel	40	0					С	riteria argume	nt of the IFS fu	unction, as	shown belo	w:
30	10/24/25	Sioux	40	0	Example:	Count Sales on 10/2	4/2025 that we	ere grea	ater than	500	For IES func	tions: you	can loin text	-
31	10/26/25	Bree	70	0	AND Logical Test is:	Date = 10/24/2025	AND Sales 50	0			comparative	e operator	with numbe	erin
32	10/24/25	Chantel	50	0	Date	10/24/2025					criteria argu	iment		
33	10/23/25	Luong	40	0	Count Sales Above 500	500	F33: ="Cou	nt Sale	Above "	'&G33				
34					Count with 2 criteria	2	G34: =COU	NTIFS([013:D33,	">"&G33,B13:I	B33,G32)			
	Credit	Logical	Single-Input	/	3) Formula Logical Tests:									
36	Rating	Test	Single Outpu	it										
37	4.6	TRUE	TRUE		When creating a Logical Form	ula, such as an Array	Logical Test:							
38	3.7	FALSE	FALSE		You type the range of cells o	or cell on the left, ther	n the comparati	ive ope	rator, the	en the range of	f cells or cell o	n the right		
39	4	TRUE	FALSE		You do not type the compar	ative operator into th	e formula as te	xt.						
40	2	FALSE	FALSE							For Logical F	ormulas that	will deliver	TRUE and	
41	1.6	FALSE	FALSE		Example:	Is the Credit Rating	greater then or	equal	to 4?	FALSE values	s, type compar	rative oper	ator directly	/ -
42	2.9	FALSE	FALSE		Single Condition Logical Test:	Credit Rating >= 4		_		into formula	(not text)			
43	C37: =E	337:B42>=G4	44											
44	D37: =	337>\$G\$44	+		Credit Rating >=	4								

SUM and SUMIFS & COUNTIFS with 2 Conditions in an OR Logical Test Over One Column

_											
	A	B	С	D	E	F	G	Н	1	J	K
(59	Two condition logi	ical test: Mom sa	ays: "If you take	out the garb	age OR clean the	table, you get des	sert".			
	70	You get dessert if y	ou just take out	garbage, or you	just clean th	e table, or you do	both!				
	71										
	72	OR Logical Test									
	73	One or more tests	needs to come o	ut true in order	to count or a	add an item.					
5	74	You must get at lea	aset one TRUE, fo	or the item to be	e included.						
Þ	5				100.000	plan -				1	
	76	For two tests in an	OR logical test,	these are the fo	our possibilit	ies:					
	77	TRUE, TRUE = TRUI	E 2 TRUEs								
	78	FALSE, TRUE = TRU	IE 1 TRUE								
	79	TRUE, FALSE = TRU	IE 1 TRUE								
2	30	FALSE, FALSE = FAL	SE 0 TRUE								
2	31										
2	32	Date	SalesRep	Sales (\$)	SUMIFS a	and COUNTIFS (ot	herIFS too) DO	NOT perform	OR Logical T	ests by default	
8	33	10/23/2025	Luong	100	For an OF	R Logical Test on	one column, us	e: SUM(COUN	NTIFS()) and S	SUM(SUMIFS())	
8	34	10/23/2025	Sioux	200							
2	35	10/26/2025	Bree	900	Example:		Count and add s	ales for teach	Sales Team		
5	36	10/24/2025	Chantel	100	ST1 logica	al test for count:	SalesRep = Luon	g OR SalesR	ep = Sioux		
8	37	10/24/2025	Luong	300							
1	38	10/24/2025	Luong				SalesTeam 1	SalesTear	m 2		
2	39	10/23/2025	Chantel	100			Luong	Bree			
9	90	10/26/2025	Bree	800			Sioux	Chantel			
9	91	10/24/2025	Sioux	200							
9	92	10/24/2025	Sioux	500			Sales Team 1	Sales Tea	im 2		
9	93	10/23/2025	Sioux	200		Count Sale	s	12	9		
9	94	10/23/2025	Luong	500		Add Sales	s 3	900	4700		
4	95	10/23/2025	Sioux	300			=SUM(COUN	TIFS(\$C\$83:\$	C\$103,G89:G	90))	
9	96	10/24/2025	Chantel	500			=SUM(SUMIF	S(\$D\$83:\$D\$	103,\$C\$83:\$0	C\$103,G89:G90))	
9	97	10/24/2025	Chantel	700							
9	8	10/24/2025	Luong	800		MAX Sale	s	800	900		
4	99	10/23/2025	Chantel	400		MIN Sale	s	100	100		
1	00	10/24/2025	Sioux	400		Average Sale	s	325 522.222	22222		
1	01	10/26/2025	Bree	700			=MAX(MAXII	S(\$D\$83:\$D\$	103,\$C\$83:\$0	C\$103,G89:G90))	
1	02	10/24/2025	Chantel	500			=MIN(MINIFS	6(\$D\$83:\$D\$1	.03,\$C\$83:\$C	\$103,G89:G90))	
1	03	10/23/2025	Luong	400			=AVERAGE(IF	((\$C\$83:\$C\$1	L03=G89)+(\$C	\$83:\$C\$103=G90),\$D	\$83:\$D\$103))
1	04							In the second se			

Array Logical Test with SUM & IF Functions to Run an OR Logical Test Over Two Different Columns

		2		(a)		8x	10	14		10-	
	Α	В	С	D	Е	F	G	Н	I	J	K
105					a						
106		Last Year Sales	Credit Rating	Customer		Example:	Our company only e	xtends credit to	custon	ners who <mark>h</mark> ave:	
107		1,250,000	4.6	SW		OR Logical Test is:	Last Year Sales > 1,0	00,000 OR Crec	lit Ratin	ng >=4.	
108		955,500	3.7	PCC				_			
109		875,000	4	QFC		Last Year Sales >	1,000,000				
110		2,100,500	2	FM		Credit Rating >=	4				
111		550,750	1.6	WM		Count Customers	4	=SUM(IF((B10	7:B112	>G109)+(C107:C112>	=G110),1,0))
112		2,500,000	2.9	L		Add Sales	6,725,500				
113							=SUM(IF((B107:B	112>G109)+(C1	.07:C11	2>=G110),B107:B112,	.O))
114		Last Year Sales	Credit Rating	Add		We CANNOT use SUMIFS a	nd COUNTIFS				
115		TRUE	TRUE	2		(or a	ny other "IFS" functi	ons) for an OR	Logical	Test across two colun	nns!!!!!
116		FALSE	FALSE	0		For an OR Logical Test on tw	vo or more columns,	use:			
117		FALSE	TRUE	1			SUM ar	nd IF functions t	ogethe	r with an Array Logica	Test.
118		TRUE	FALSE	1		For an Array Logical Tes	t in Excel:				
119		FALSE	FALSE	0		1) AND Logical Test u	ises * math operator				
120		TRUE	FALSE	1		2) OR Logical Test use	es + math operator				
121						3) Any math operato	r used on TRUE and F	ALSE converts T	RUE to	1 and FALSE to 0	
122						4) Excel interprets an	iy non-zero number a	s TRUE, and zer	o as FA	LSE.	
123											
124											
125						AND Logical Test: Us	se * multiplication				
126						TRUE * TRUE = 1	* 1 = 1				
127						TRUE * FALSE = 1	* 0 = 0				
128						FALSE * TRUE = 0	* 1 = 0				
129						FALSE * FALSE = (0 * 0 = 0				
130						OR Logical Test: Lise	+ Addition				
131						TRUE + TRUE - 1	+1 - 2				
132							+0-1				
133							1 - 1				
134											
135						FALSE + FALSE = 0	0 + 0 = 0				
136						<u>.</u>					
137											
138											

Alternative Formulas for an OR Logical Test Over Two Columns:

	Α	В	С	D E		F	G	Н		J	К			
139														
140	0 Other Methods for OR Logical Tests Across Two Columns:													
141														
142		Last Year Sales >	1,000,000											
143		Credit Rating >=	4											
144		Count Customers	4	=SUM(IF((B1	-SUM(IF((B107:B112>C142)+(C107:C112>=C143),1))									
				=COUNTIFS(OUNTIFS(B107:B112,">"&C142)+COUNTIFS(C107:C112,">="&C143)-									
145		Count Customers	4	COUNTIFS(B	COUNTIFS(B107:B112,">"&C142,C107:C112,">="&C143)									
146		Count Customers	4	=ROWS(FILT	EF	R(D107:D112,(B107:B112>C	142)+(C107:C112>=C	143)))						
147		Count Customers	4	=DCOUNTA(=DCOUNTA(B106:D112,D106,B153:C155)									
148		Add Sales	6,725,500	=SUM(IF((B1	=SUM(IF((B107:B112>C142)+(C107:C112>=C143),B107:B112))									
				=SUMIFS(B1	SUMIFS(B107:B112,B107:B112,">"&C142)+SUMIFS(B107:B112,C107:C112,">="&C143)-									
149		Add Sales	6,725,500	SUMIFS(B10	SUMIFS(B107:B112,B107:B112,">"&C142,C107:C112,">="&C143)									
150		Add Sales	6,725,500	=SUM(FILTE	=SUM(FILTER(B107:B112,(B107:B112>C142)+(C107:C112>=C143)))									
151		Add Sales	6,725,500	=DSUM(B10	=DSUM(B106:D112,B106,B153:C155)									
152														
153		Last Year Sales Credit Rating												
154		>1000000												
155			>=4											
156														
157		Other Aggregate Ca	alculations for OF	R Logical Tests A	cr	oss Two Columns:								
158	_													
159		MAX Sales	2,500,000	=MAX(IF((B1	10	7:B112>C142)+(C107:C112>	-=C143),B107:B112))							
160		MIN Sales	875,000	=MIN(IF((B1	.07	7:B112>C142)+(C107:C112>	=C143),B107:B112))							
161		Average Sales	1,681,375	=AVERAGE(I	IF((B107:B112>C142)+(C107:C	112>=C143),B107:B1	.12))						
162														
163														

Assembly Line Example #1 with SEQUENCE & COUNTIFS:

	Α	В	С	D	E	F	G	Н	- II	I	J K	L	М	N	O F
		Time to Assemble		-				•						-	
		Product at Post													
1	Post	(Seconds)		Goal: Count how man	y times a	Post	fell below re	quired <10 se	cond a	ssem	bly time.	Assembly	Line With	12 Posts:	
2	1	9										- Carl		A state	
3	2	9.2		AND Logical Test: Post	: has to e	qual g	given post AN	D Seconds <1	0				11		12
4	3	8.3										1111		Come	
5	4	8.3		Hurdle in Seconds:	<10							JEE	SAN P		
6	5	8.8												IN LINE	
7	6	10		Post	Count										
8	7	10.7		1		38	In Cell D8 is:	=SEQUENCE(12)			EQM			
9	8	8		2		41	SEQUENCE of	delivers an arr	ay of se	equen	<mark>ntial</mark> numb	e <mark>r Elektrik</mark>	NUS		
10	9	9.1		3		45									
11	10	10.7		4		40	=COUNTIFS(A2:A589,D8#	B2:B58	39,E5)			-		
12	11	9.9		5		45	COUNTIFS co	ounts with tw	o condi	itions,	<mark>/</mark> criteria				PURNITUR
13	12	8.5		6		42									
14	1	10		7		17									
15	2	8.6		8		48									
16	3	9.1		9		45									
17	4	8.3		10		42									
18	5	8.1		11		19									
19	6	10.4		12		39									
20	7	9.1													
21	8	8.4		** This is an example of	of where	a Piv	otTable would	d be harder to	create	•					
22	9	8.3		because our cond	lition use	es a co	omparative op	erator (we ha	ave a hu	urdle	as a condi	tion).			
23	10	11													

Assembly Line Example #2 with MINIFS & MAXIFS:

	A	В	С	D	E	F	G	Н	Ι	J			
1	**Time to Assemble Product at Post (Seconds)												
2													
3	Post Seconds Goal: Find Min Time for Each Post. And have formulas update automatically.												
4	1	9											
5	2	9.2		MINIFS MAXIFS									
6	3	8.3				-	_						
7	4	8.3		Post	Min	Max		In Cell D8 is: =SEQUEN	CE(12)				
8	5	8.8		1	7.8	10.5	5	SEQUENCE delivers an	array of sequential nu	mbers			
9	6	10		2	7.8	10.4	4						
10	7	10.7		3	7.5	11	1	In Cell E8 is: =MINIFS(E	34:B591,A4:A591,D8#)				
11	8	8		4	7.8	11	1	MINIFS finds smallest	value with one or more	e conditions			
12	9	9.1		5	7.3	10.5	5						
13	10	10.3		6	7.6	10.7	7	In Cell F8 is: =MAXIFS(B4:B591,A4:A591,D8#)				
14	11	9.9		7	9	12.1	1	MAXIFS finds biggest v	alue with with one or r	more conditions			
15	12	8.5		8	7.5	10.4	1						
16	1	10		9	7.5	11.2	2						
17	2	8.6		10	7.2	10.3	3						
18	3	9.1		11	9.2	11.75	5						
19	4	8.3		12	7.5	11.1	1						
20	5	8.1											
21	6	10.4		** This is an example of	of where a	PivotTable	wo	uld be easy to create, b	out it would not update	e without a "Refresh"			
22	7	9.1											
23	8	8.4											