

# Differentiate between SUM, SUMIF, SUMIFS and DSUM functions

Whenever you enter a function = SUM in a cell in Excel, you will get a lot of functions starting with SUM and wondering how they are different? This article will help you solve that question.












Whenever you enter a function = SUM in a cell in Excel, you will get a lot of functions starting with SUM and wondering how they are different? This article will help you solve that question.

1. 3 ways to calculate totals in Excel
2. Calculate the subtotal of the list on Excel
3. Calculate the total value of the filtered list in Excel

In this article we will cover four basic functions that are SUM, SUMIF, SUMIFS and DSUM.

Each function has its own function to synthesize numbers, we will learn each function one by one.

# =sum

-  SUM
-  SUMIF
-  SUMIFS
-  SUMPRODUCT
-  SUMSQ
-  SUMX2MY2
-  SUMX2PY2
-  SUMXMY2
-  DSUM
-  IMSUM
-  SERIESSUM

Ad

To better understand the function of each function, the article uses an example of a company's sales figure. This is a 1000-row data table, so the range of data will be from cell A1 to cell J1001.

	A	B	C	D	E	F	G	H	I	J
1	Order ID	Date	Customer Name	Age	Gender	Size	Color	Price	Qty	Total
2	1	1-Oct-14	Gaurav Yadav	47	Male	Small	Black	230	2	460
3	2	2-Oct-14	Sushma Adarkar	59	Female	Small	Yellow	255	1	255
4	3	3-Jul-14	Shubhra Gupta	54	Female	Small	Multicolor	220	2	440
5	4	4-Jul-14	Meera Gupta	50	Female	Small	Yellow	270	2	540
6	5	5-Jul-14	Mona Yadav	51	Female	Small	Pink	275	3	825
7	6	5-Jul-14	Surya Nadhi	14	Male	Small	Multicolor	300	1	300
8	7	6-Jul-14	Manish Yadav	41	Male	Small	Black	240	3	720
9	8	7-Jul-14	Mohanlal Deol	16	Male	Small	Black	270	3	810
10	9	7-Jul-14	Ankita Deol	36	Female	Large	Pink	255	1	255
11	10	7-Jul-14	Meelu Nadhwani	34	Female	Small	Pink	270	4	1080
12	11	10-Jul-14	Sangeeta Chowdhry	39	Female	Small	Black	275	2	550
13	12	11-Jul-14	Sridhar Kannor	21	Male	Large	Black	270	1	270

## SUM function

The SUM function functions to sum multiple individual cells, sum a range or even multiple ranges at once.

For example, sum all the number of sold cells (column I), using the following formula:

**= SUM (I2: I1001)**

Calculate the total selling price (column J), using the formula:

**= SUM (J2: J1001)**

	D	E	F	G	H	I	J	K	L	M	N
1	Age	Gender	Size	Color	Price	Qty	Total				
2	47	Male	Small	Black	230	2	460		SUM	Sum of all Qty	
3	59	Female	Small	Yellow	255	1	255			2562	
4	54	Female	Small	Multicolor	220	2	440			Sum of all Totals	
5	50	Female	Small	Yellow	270	2	540			=SUM(J2:J1001)	

## SUMIF function

The SUMIF function performs summing based on a condition.

For example:

Sum up all the number of blue boxes sold, using the formula:

**= SUMIF (G2: G1001, 'blue', I2: I1001)**

Formula of SUMIF function:

**= SUMIF (Range, Criteria, Sum\_Range)**

Inside:

1. Criteria: is the condition for the function, in this example is blue. Conditions are not case sensitive, so you can write blue or BLUE, the function will still understand the conditions you give. Because the condition is text, day, it needs a sign ". If the condition is numeric, you don't need this sign anymore.
2. Range is the range containing criteria, in this example the range contains Blue, ie column G (Color).
3. Sum\_Range is the sum of the sum. In this case we need to calculate the total number so the range here is column I (Qty).

One thing to keep in mind is that the function order is not disturbed, first is Range, Criteria, and finally Sum\_Range.

	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Age	Gender	Size	Color	Price	Qty	Total						
2	47	Male	Small	Black	230	2	460			<b>SUM</b>	Sum of all Qty		
3	59	Female	Small	Yellow	255	1	255				2562		
4	54	Female	Small	Multicolor	220	2	440				Sum of all Totals		
5	50	Female	Small	Yellow	270	2	540				660500		
6	51	Female	Small	Pink	275	3	825						
7	14	Male	Small	Multicolor	300	1	300		<b>SUMIF</b>	Sum of Qty of Blue Umbrellas			
8	41	Male	Small	Black	240	3	720			=SUMIF(G2:G1001,"blue",I2:I1001)			
9	16	Male	Small	Black	270	3	810						

## 1. How to combine Sumif and Vlookup functions in Excel

## SUMIFS function

The SUMIFS function (note 's' in the function name) is summed based on multiple conditions, unlike the SUMIF function above that can only be summed based on a condition. You can also use this function with only one condition.

For example:

Summing up all the small, blue sized cells we will use the formula:

**= SUMIFS (I2: I1001, G2: G1001, 'blue', F2: F1001, 'small')**

Formula of SUMIFS function:

**= SUMIFS (Sum\_Range, Range 1, Criteria 1, Range 2, Criteria 2, .., Range n, Criteria n)**

Inside:

1. Sum\_Range is the sum of the sum of SUMIFS functions set first. This is different from SUMIF function.
2. Followed by Range and Criteria of each condition, similar to SUMIF.

All conditions in SUMIFS are conditions And, not conditions Or. Therefore, there are no two conditions for the same column. If you do so, the formula will be a little different, we will learn in the next section.

Similarly, you must not disturb the order of functions.

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Age	Gender	Size	Color	Price	Qty	Total							
4	54	Female	Small	Multicolor	220	2	440			Sum of all Totals				
5	50	Female	Small	Yellow	270	2	540			660500				
6	51	Female	Small	Pink	275	3	825							
7	14	Male	Small	Multicolor	300	1	300		<b>SUMIF</b>	Sum of Qty of Blue Umbrellas				
8	41	Male	Small	Black	240	3	720			752				
9	16	Male	Small	Black	270	3	810							
10	36	Female	Large	Pink	255	1	255							
11	34	Female	Small	Pink	270	4	1080		<b>SUMIFS</b>	Sum of Qty of Blue, Small Umbrellas				
12	39	Female	Small	Black	275	2	550			=SUMIFS(I2:I1001,G2:G1001,"blue",F2:F1001,"small")				
13	21	Male	Large	Black	270	1	270							
14	53	Female	Small	Multicolor	230	1	230							
15	47	Male	Small	Black	220	3	660			Sum of Qty of Blue + Yellow Umbrellas				
16	32	Male	Small	Multicolor	275	4	1100			973				
17	18	Female	Small	Black	270	3	810							
18	15	Female	Small	Pink	250	1	250							
19	35	Female	Small	Blue	250	2	500		<b>DSUM</b>	Sum of Qty of Blue + Yellow + Black Umbrellas				
20	49	Male	Large	Black	280	2	560							

As mentioned above, you cannot use two conditions in the same column but if you want to calculate the total number of green and yellow cells (in the same column G), we use the following formula:

**= SUMIFS (I2: I1001, G2: G1001, 'blue') + SUMIFS (I2: I1001, G2: G1001, 'yellow')**

According to the above formula, we combine two SUMIFS functions to facilitate Or. You can use a combination of two SUMIF functions to calculate the sum.

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Age	Gender	Size	Color	Price	Qty	Total								
4	54	Female	Small	Multicolor	220	2	440			Sum of all Totals					
5	50	Female	Small	Yellow	270	2	540			660500					
6	51	Female	Small	Pink	275	3	825								
7	14	Male	Small	Multicolor	300	1	300		SUMIF	Sum of Qty of Blue Umbrellas					
8	41	Male	Small	Black	240	3	720			752					
9	16	Male	Small	Black	270	3	810								
10	36	Female	Large	Pink	255	1	255								
11	34	Female	Small	Pink	270	4	1080		SUMIFS	Sum of Qty of Blue, Small Umbrellas					
12	39	Female	Small	Black	275	2	550			478					
13	21	Male	Large	Black	270	1	270								
14	53	Female	Small	Multicolor	230	1	230								
15	47	Male	Small	Black	220	3	660			Sum of Qty of Blue + Yellow Umbrellas					
16	32	Male	Small	Multicolor	275	4	1100			=SUMIFS(I2:I1001,G2:G1001,"blue")+SUMIFS(I2:I1001,G2:G1001,"yellow")					
17	18	Female	Small	Black	270	3	810								
18	15	Female	Small	Pink	255	1	255								

## DSUM function

Now, if you need to calculate the number of blue, black, yellow and pink cells, how to use the formula? You can use SUMIFS + SUMIFS + SUMIFS + SUMIFS function as above.

However, what if you want to calculate the total of 20 colors in the 40-color box in the box?

Instead of writing = SUMIFS + SUMIFS + SUMIFS + SUMIFS + . . . 20 times, you simply need to use DSUM function. DSUM function allows you to create conditions outside the formula.

Let's take an example for you to understand this function better.

To calculate the total number of blue, yellow and black cells, create conditions outside the data table.

<b>Color</b>
<b>Blue</b>
<b>Yellow</b>
<b>Black</b>

You need to write the column header first, in this case **Color** . Below you write each condition to be summed in each row. When writing this condition under the other condition, you are creating conditions Or.

The formula will be:

= **DSUM (A1: J1001, I1, M21: M24)**

General formula for DSUM functions:

= **DSUM (Database, Field, Criteria)**

Inside:

1. Database: is the entire scope of data. In this case, A1: J1001.
2. Field: is the title of the column to be summed, in this example is column Qty (I1).
3. Criteria are the range of data you create outside. Here is the range from cell M21 to M24.

