How to Choose Between SUM and SUMX in Power BI for Accurate Calculations

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SUM is a function in Power BI that calculates the sum of a column or measure in a table or visual. It returns a single value. On the other hand, SUMX is an iterator function that performs a calculation for each row in a table and then sums up the results. It is useful when working with multiple tables or when a calculation needs to be performed for each row in a table. It returns a table with a single row and column, which can then be used in further calculations or as a measure in a visual.

You can use the **SUM** and **SUMX** functions in DAX within Power BI to calculate the sum of values, but they work in slightly different ways:

The **SUM** function returns the sum of values in a single column.

For example, you can use the following syntax to calculate the sum of the **Points** column in a table named **my_data**:

Sum Sales = SUM('my_data')

The **SUMX** function takes multiples columns as input and returns the sum of an expression that is evaluated for each row in a table.

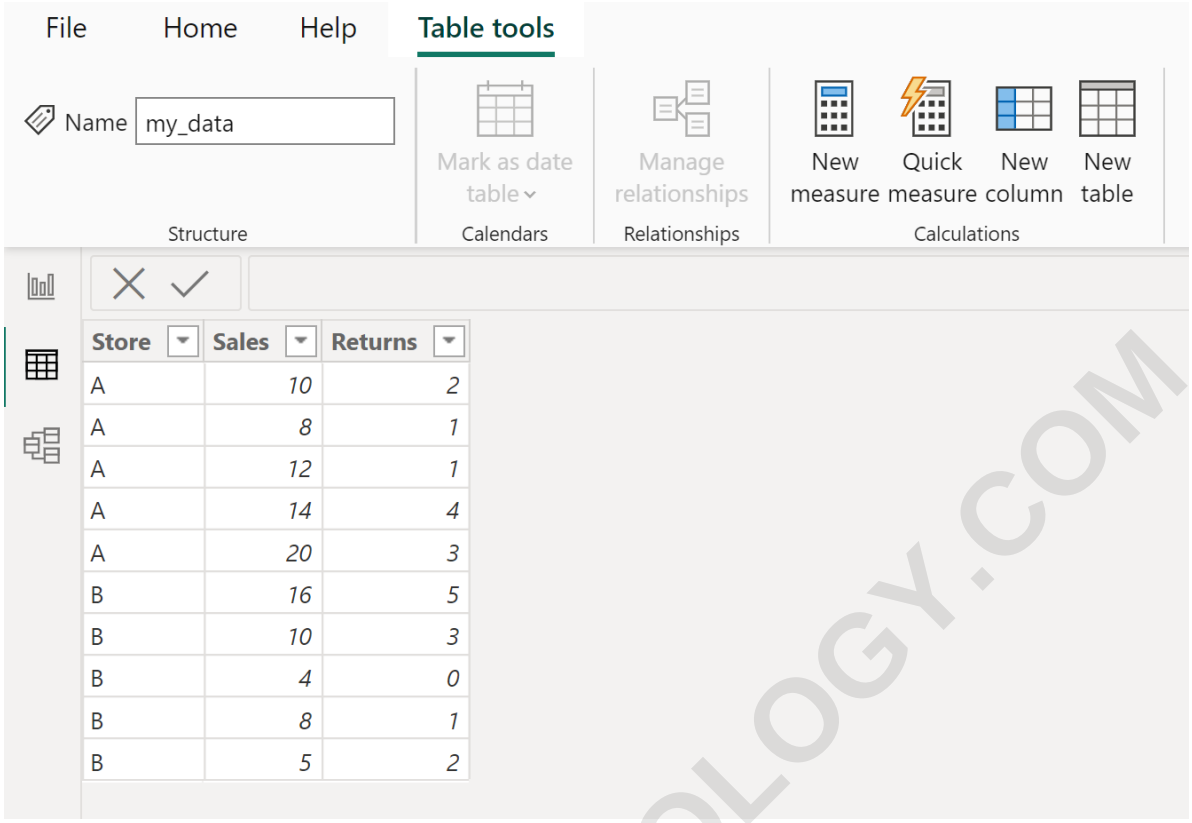
For example, you can use the following syntax to calculate the sum of the difference between the **Sales** and **Returns** columns in a table:

Sum Sales = SUMX('my_data', 'my_data' - 'my_data')

Or you could use the following syntax to calculate the sum of values in the **Sales** column of a table, filtered based on where the corresponding value in the **Store** column is equal to A:

Sum Sales = SUMX(FILTER('my_data', 'my_data'="A"),)

The following examples show how to use both the **SUM** and **SUMX** functions in practice with the following table named **my_data** in Power BI:

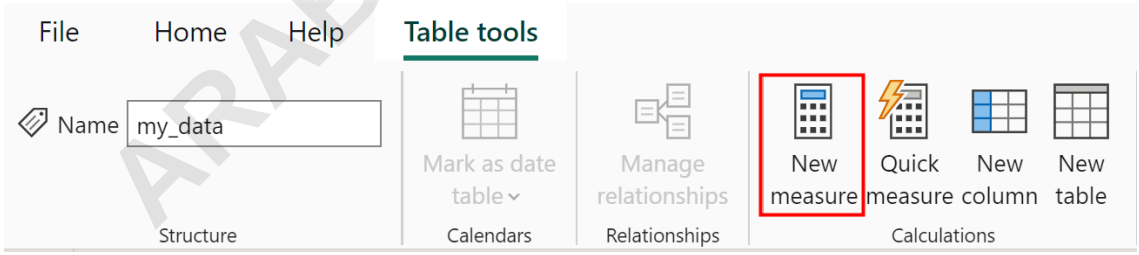


Store	Sales	Returns
A	10	2
A	8	1
A	12	1
A	14	4
A	20	3
B	16	5
B	10	3
B	4	0
B	8	1
B	5	2

Example 1: Use SUM to Calculate Sum of Values in Column

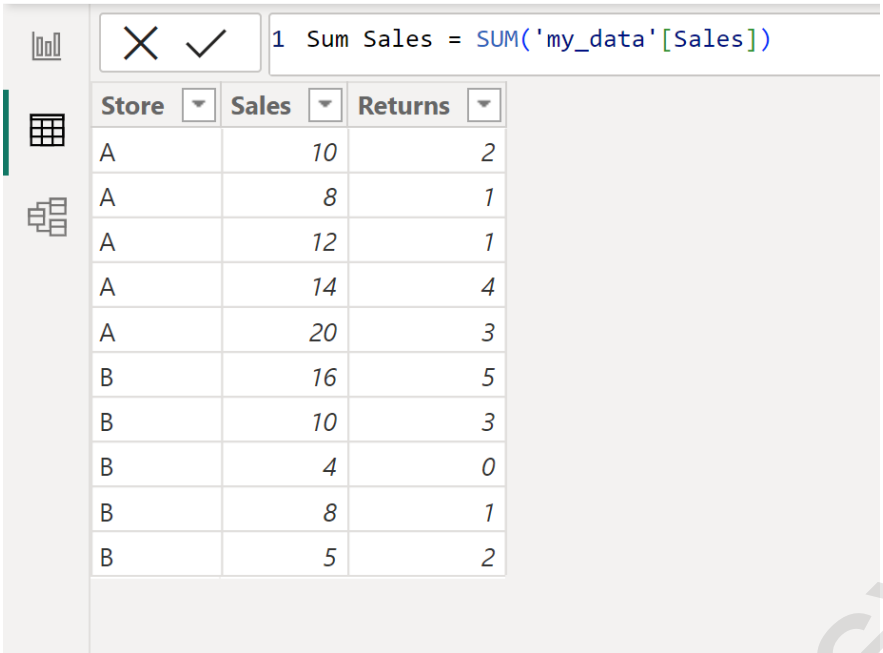
Suppose we would like to calculate the sum of values in the **Sales** column.

To do so, click the **Table tools** tab along the top ribbon, then click the **New measure** icon:



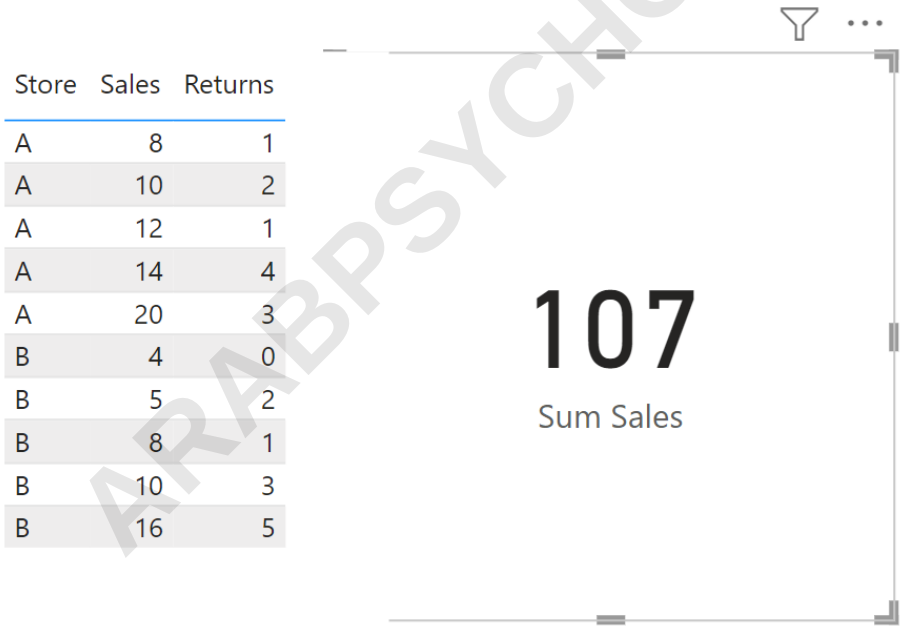
Then type in the following formula into the formula bar:

Sum Sales = SUM('my_data')



Store	Sales	Returns
A	10	2
A	8	1
A	12	1
A	14	4
A	20	3
B	16	5
B	10	3
B	4	0
B	8	1
B	5	2

If we'd like, we can display this value by inserting a Card visualization into our report:



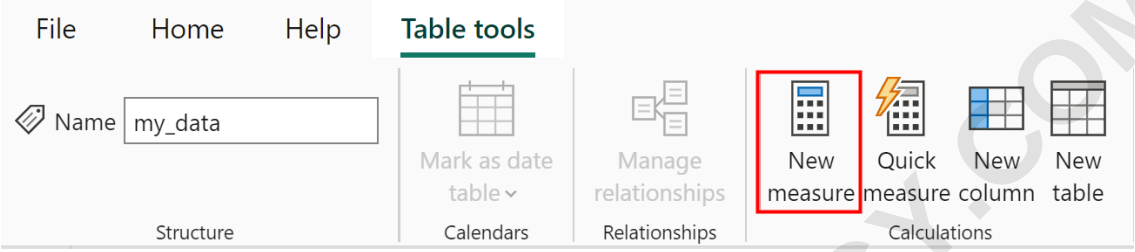
Store	Sales	Returns
A	8	1
A	10	2
A	12	1
A	14	4
A	20	3
B	4	0
B	5	2
B	8	1
B	10	3
B	16	5

We can see that the sum of all values in the **Sales** column is **107**.

Example 2: Use SUMX to Calculate Sum of Differences Between Two Columns

Suppose we would like to calculate the sum of the differences between the **Sales** and **Returns** columns.

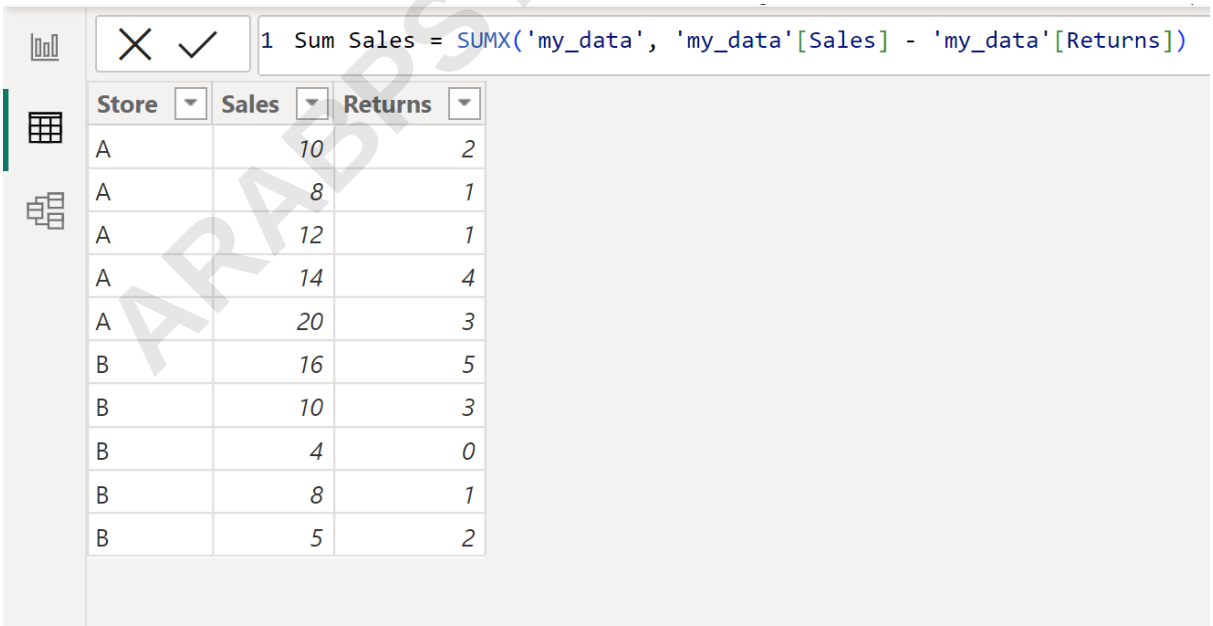
To do so, click the **Table tools** tab along the top ribbon, then click the **New measure** icon:



Then type in the following formula into the formula bar:

Sum Sales = SUMX('my_data', 'my_data' - 'my_data')

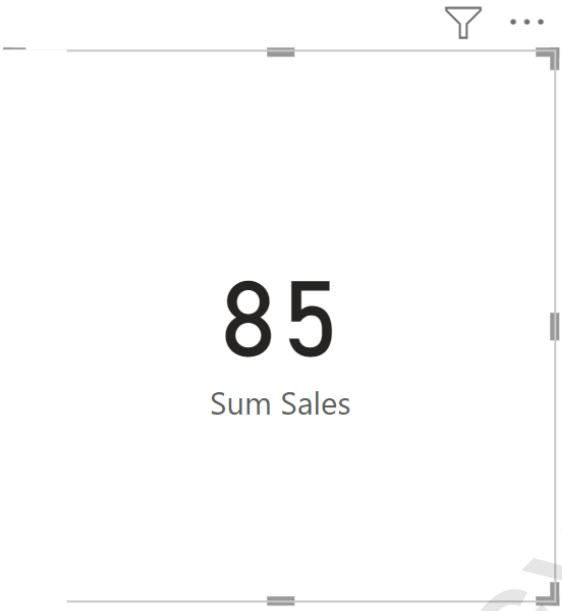
This will create a new measure named **Sum Sales** that contains the sum of the differences between the **Sales** and **Returns** columns in the table:



Store	Sales	Returns
A	10	2
A	8	1
A	12	1
A	14	4
A	20	3
B	16	5
B	10	3
B	4	0
B	8	1
B	5	2

If we'd like, we can display this value by inserting a Card visualization into our report:

Store	Sales	Returns
A	8	1
A	10	2
A	12	1
A	14	4
A	20	3
B	4	0
B	5	2
B	8	1
B	10	3
B	16	5

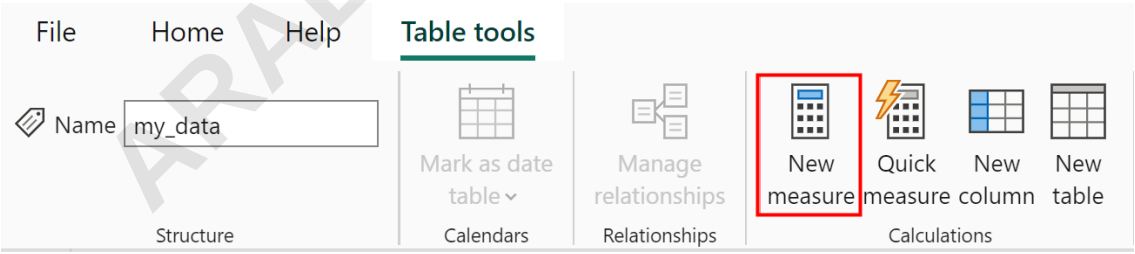


We can see that the sum of the differences between the **Sales** and **Returns** columns in the table is **85**.

Example 3: Use SUMX to Calculate Sum with Filter

Suppose we would like to calculate the sum of the values in the **Sales** column, filtered based on the rows where the **Store** column is equal to A.

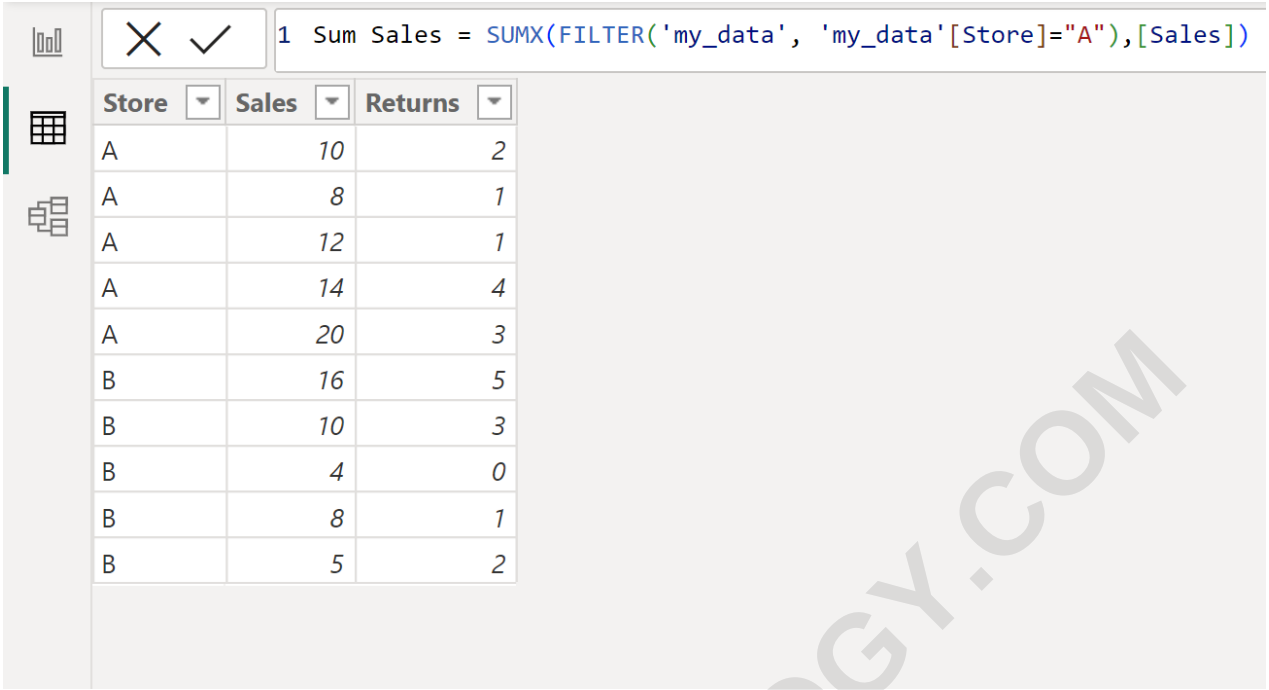
To do so, click the **Table tools** tab along the top ribbon, then click the **New measure** icon:



Then type in the following formula into the formula bar:

Sum Sales = SUMX(FILTER('my_data', 'my_data'="A"),)

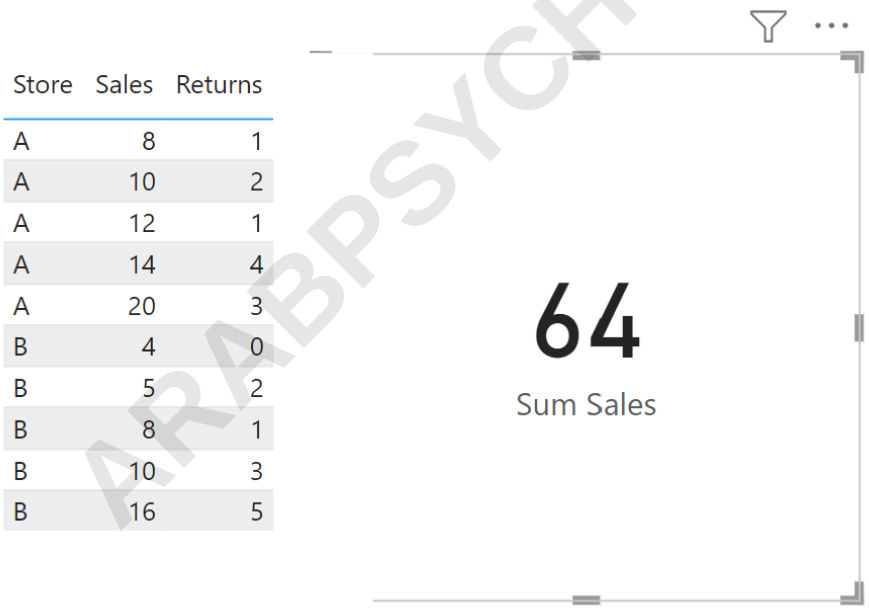
This will create a new measure named **Sum Sales** that contains the sum of the values in the **Sales** column, filtered based on the rows where the **Store** column is equal to A:



```
1 Sum Sales = SUMX(FILTER('my_data', 'my_data'[Store]="A"),[Sales])
```

Store	Sales	Returns
A	10	2
A	8	1
A	12	1
A	14	4
A	20	3
B	16	5
B	10	3
B	4	0
B	8	1
B	5	2

If we'd like, we can display this value by inserting a Card visualization into our report:



Store	Sales	Returns
A	8	1
A	10	2
A	12	1
A	14	4
A	20	3
B	4	0
B	5	2
B	8	1
B	10	3
B	16	5

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Sum Sales

We can see that the sum of the values in the **Sales** column for the rows where the **Store** column is equal to A is **64**.

Summary: The Difference Between SUM vs. SUMX in Power BI

In summary:

The **SUM** function is used to calculate the sum of values in one column.
The **SUMX** function is used to calculate the sum of an expression that can include multiple columns in a table and can be used with the **FILTER** function.

Feel free to use either the **SUM** or **SUMX** function depending on the type of calculation that you would like to perform.

The following tutorials explain how to perform other common tasks in Power BI: