

# How can I use Google Sheets to calculate the average of a dataset while excluding outliers?

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## RECOMMENDED CITATION

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Google Sheets is a powerful tool that allows users to organize and analyze data through the use of spreadsheets. One useful feature of Google Sheets is the ability to calculate the average of a dataset while excluding outliers. This can be achieved by using the AVERAGEIF function, which allows users to specify certain criteria that must be met for the values to be included in the calculation. By setting a condition to exclude outlier values, users can obtain a more accurate average for their dataset. This feature is particularly helpful for data analysis and decision making, as it allows users to filter out any extreme values that may skew the results. Overall, the use of Google Sheets to calculate the average while excluding outliers provides a valuable tool for data manipulation and analysis.

## **Google Sheets: Calculate Average Excluding Outliers**

**There are two ways to calculate an average while excluding outliers in Google Sheets:**

**1. Use TRIMMEAN to Exclude Outliers**

**2. Use Interquartile Range to Exclude Outliers**

**We will use the following dataset in Google Sheets to illustrate how to use both methods:**

	A	B	C	D	
1	<b>data</b>				
2	18				
3	24				
4	26				
5	34				
6	38				
7	45				
8	48				
9	54				
10	60				
11	73				
12	79				
13	85				
14	94				
15	98				
16	164				
17					
18					
19					
20					
21					

### Method 1: Use TRIMMEAN to Exclude Outliers

The TRIMMEAN function calculates the average of a range of values while excluding a certain percentage of observations from the top and bottom of the dataset.

For example, we can use the following formula to calculate the average value in column A while excluding a total of 20% of observations (10% from the top and 10% from the bottom):

## =TRIMMEAN(A2:A16, 20%)

Since we have 15 values in our dataset 10% is 1.5, which is rounded down to 1.

Thus, this formula will calculate the average of the values in the range while excluding the smallest value and the largest value:

C2	A	B	C
	data		Avg. Excluding Outliers
2	18		58.30769231
3	24		
4	26		
5	34		
6	38		
7	45		
8	48		
9	54		
10	60		
11	73		
12	79		
13	85		
14	94		
15	98		
16	164		
17			
18			
19			
20			

**The average with outliers excluded turns out to be 58.30769.**

### **Method 2: Use Interquartile Range to Exclude Outliers**

**The (IQR) is the difference between the 75th percentile (Q3) and the 25th percentile (Q1) in a dataset. It measures the spread of the middle 50% of values.**

**We can define an observation to be an outlier if it is 1.5 times the interquartile range greater than the third quartile (Q3) or 1.5 times the interquartile range less than the first quartile (Q1).**

**We can use the following formula to calculate the interquartile range for our dataset in Google Sheets:**

**=QUARTILE(A2:A16,3)-QUARTILE(A2:A16,1)**

**The following screenshot shows how to use this formula:**

B18		=QUARTILE(A2:A16,3)-QUARTILE(A2:A16,1)			
	A	B	C	D	
1	<b>data</b>				
2		18			
3		24			
4		26			
5		34			
6		38			
7		45			
8		48			
9		54			
10		60			
11		73			
12		79			
13		85			
14		94			
15		98			
16		164			
17					
18	<b>IQR</b>		46		
19					
20					
21					
22					
23					

Next, we can use the following formula to use the IQR to identify outlier values and assign a "1" to any value that is an outlier in the dataset:

**=IF(OR(A2<QUARTILE(\$A\$2:\$A\$16,1)-1.5\*\$B\$18,A2>QUARTILE(\$A\$2:\$A\$16,3)+1.5\*\$B\$18),1,0)**

The following screenshot shows how to use this formula:

	A	B	C	D	E
1	<b>data</b>	<b>outlier?</b>			
2	18	0			
3	24	0			
4	26	0			
5	34	0			
6	38	0			
7	45	0			
8	48	0			
9	54	0			
10	60	0			
11	73	0			
12	79	0			
13	85	0			
14	94	0			
15	98	0			
16	164	1			
17					
18	<b>IQR</b>	46			
19					
20					
21					
22					

The only value that turns out to be an outlier is 164.

Lastly, we can use the following formula to calculate the average of all values in the dataset that are not outliers:

**=AVERAGEIF(B2:B16, 0, A2:A16)**

The following screenshot shows how to use this formula:

C2 fx =AVERAGEIF(B2:B16, 0, A2:A16)

	A	B	C	D
1	<b>data</b>	<b>outlier?</b>	<b>Avg. Excluding Outliers</b>	
2	18	0	55.42857143	
3	24	0		
4	26	0		
5	34	0		
6	38	0		
7	45	0		
8	48	0		
9	54	0		
10	60	0		
11	73	0		
12	79	0		
13	85	0		
14	94	0		
15	98	0		
16	164	1		
17				
18	<b>IQR</b>	46		
19				
20				
21				

The average with outliers excluded turns out to be **55.42857**.

The following tutorials explain how to perform other common tasks in Google Sheets: