

# How do you calculate the mean, median, and mode in SAS?

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## RECOMMENDED CITATION

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Calculating the mean, median, and mode in SAS involves using specific procedures and functions within the SAS software. The mean, also known as the average, can be calculated by using the MEAN function, which takes the values of a variable and calculates their sum, then divides it by the number of observations. The median, or the middle value in a dataset, can be obtained by using the MEDIAN function, which orders the values and returns the middle value if there is an odd number of values, or the average of the two middle values if there is an even number. The mode, or the most frequently occurring value, can be determined using the MODE function, which returns the value with the highest frequency. By utilizing these functions in SAS, accurate calculations of the mean, median, and mode can be achieved for any given dataset.

## Calculate Mean, Median, & Mode in SAS

**You can use proc univariate to quickly calculate the mean, median, and mode of variables in SAS.**

**This procedure uses the following basic syntax:**

```
proc univariate data=my_data;  
run;
```

**The following example shows how to use this syntax in practice.**

**Example: Calculate Mean, Median & Mode for All Variables**

**Suppose we have the following dataset in SAS:**

```
/*create dataset*/  
data my_data;  
input team $ points rebounds assists;
```

**datalines;**

**A 25 10 8**

**B 18 4 5**

**C 18 7 10**

**D 24 12 4**

**E 27 11 5**

**F 30 8 7**

**G 12 8 5**

**;**

**run;**

**/\*view dataset\*/**

**proc printdata=my\_data;**

Obs	team	points	rebounds	assists
1	A	25	10	8
2	B	18	4	5
3	C	18	7	10
4	D	24	12	4
5	E	27	11	5
6	F	30	8	7
7	G	12	8	5

**We can use the following code to calculate the mean, median and mode for all variables in our dataset:**

**/\*calculate mean, median, mode for each variable in**

```
my_data*/
proc univariate data=my_data;
run;
```

This code produces the following output:

## 1. Mean, Median & Mode for Points Variable

The UNIVARIATE Procedure  
Variable: points

Moments			
<b>N</b>	7	<b>Sum Weights</b>	7
<b>Mean</b>	22	<b>Sum Observations</b>	154
<b>Std Deviation</b>	6.244998	<b>Variance</b>	39
<b>Skewness</b>	-0.4368625	<b>Kurtosis</b>	-0.6965155
<b>Uncorrected SS</b>	3622	<b>Corrected SS</b>	234
<b>Coeff Variation</b>	28.3863545	<b>Std Error Mean</b>	2.36038738

  

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	22.00000	<b>Std Deviation</b>	6.24500
<b>Median</b>	24.00000	<b>Variance</b>	39.00000
<b>Mode</b>	18.00000	<b>Range</b>	18.00000
		<b>Interquartile Range</b>	9.00000

We can see:

The mean points value is 22. The median points value is 24. The mode points value is 18.

## 2. Mean, Median & Mode for Rebounds Variable

The UNIVARIATE Procedure  
Variable: rebounds

Moments			
<b>N</b>	7	<b>Sum Weights</b>	7
<b>Mean</b>	8.57142857	<b>Sum Observations</b>	60
<b>Std Deviation</b>	2.69920623	<b>Variance</b>	7.28571429
<b>Skewness</b>	-0.5012367	<b>Kurtosis</b>	0.05221069
<b>Uncorrected SS</b>	558	<b>Corrected SS</b>	43.7142857
<b>Coeff Variation</b>	31.4907394	<b>Std Error Mean</b>	1.02020406

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	8.571429	<b>Std Deviation</b>	2.69921
<b>Median</b>	8.000000	<b>Variance</b>	7.28571
<b>Mode</b>	8.000000	<b>Range</b>	8.00000
		<b>Interquartile Range</b>	4.00000

The mean rebounds value is 8.57. The median rebounds value is 8. The mode rebounds value is 8.

### 3. Mean, Median & Mode for Assists Variable

**The UNIVARIATE Procedure**  
Variable: assists

Moments			
<b>N</b>	7	<b>Sum Weights</b>	7
<b>Mean</b>	6.28571429	<b>Sum Observations</b>	44
<b>Std Deviation</b>	2.13808994	<b>Variance</b>	4.57142857
<b>Skewness</b>	0.91495216	<b>Kurtosis</b>	-0.1585938
<b>Uncorrected SS</b>	304	<b>Corrected SS</b>	27.4285714
<b>Coeff Variation</b>	34.0150672	<b>Std Error Mean</b>	0.80812204

  

Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	6.285714	<b>Std Deviation</b>	2.13809
<b>Median</b>	5.000000	<b>Variance</b>	4.57143
<b>Mode</b>	5.000000	<b>Range</b>	6.00000
		<b>Interquartile Range</b>	3.00000

**We can see:**

**The mean assists value is 6.28. The median assists value is 5. The mode assists value is 5.**

**If you'd like to only calculate the mean, median and mode for one specific variable, you can use the following syntax:**

```
/*calculate mean, median, and mode only for points variable*/
```

```
proc univariate data=my_data; var points;  
run;
```

**The mean, median and mode values will only be calculated for the points variable.**

**Note: You can find the complete documentation for PROC UNIVARIATE .**

#### **Additional Resources**

**The following tutorials explain how to perform other common tasks in SAS:**

ARABPSYCHOLOGY.COM