## Statistics Formulas

# Statistics Formulas

**Statistics** is a branch of mathematics which deals with numbers and data analysis. Statistics is the study of the collection, analysis, interpretation, presentation, and organization of data. Statistical theory defines a statistic as a function of a sample where the function itself is independent of the sample's distribution.

In short, Statistics is associated with collecting, classifying, arranging and presenting numerical data. It allows us to interpret various results from it and forecast many possibilities. Statistics deals with facts, observations and information which are in the form of numeric data only. With the help of statistics, we are able to find various measures of central tendencies and the deviation of different values from the center.

## Statistics Formula Sheet

The important statistics formulas are listed in the chart below:

| | | |
|---|---|---|
| Mean | $\bar{x} = \frac{\sum x}{n}$ | x = Observations given<br>n = Total number of observations |

| | | |
|---|---|---|
| Median | If n is odd, then M = $\left(\frac{n+1}{2}\right)_{th}$ term<br>If n is even, then M = $\frac{\left(\frac{n}{2}\right)^{th}term+\left(\frac{n}{2}+1\right)^{th}term}{2}$ | n = Total number of observations |
| Mode | The value which occurs most frequently | |
| Variance | $\sigma^2 = \frac{\sum(x-\bar{x})^2}{n}$ | x = Observations given<br>$\bar{x}$ = Mean<br>n = Total number of observations |
| Standard Deviation | $S = \sigma = \sqrt{\frac{\sum(x-\bar{x})^2}{n}}$ | x = Observations given<br>$\bar{x}$ = Mean<br>n = Total number of observations |

Additional guidelines on all statistics formula are given below. See the below list where all statistical formulas are listed.

More topics in Statistics Formulas

| | |
|---|---|
| Population Mean Formula (https://byjus.com/population-mean-formula/) | Mean Median Mode Formula (https://byjus.com/mean-median-mode-formula/) |
| Mean Deviation Formula (/mean-deviation-formula/) | Standard Deviation Formula (https://byjus.com/standard-deviation-formula/) |
| Quartile Formula (https://byjus.com/quartile-formula/) | Correlation Coefficient Formula (/correlation-coefficient-formula/) |