

How do you calculate a trimmed mean step-by-step?

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The trimmed mean is a statistical measure used to find the average of a set of data while removing extreme values that may skew the results. It is calculated by first arranging the data in ascending order. Then, a certain percentage of the data is trimmed from both ends, typically 10% from each end. This trimmed portion is excluded from the calculation of the mean. Next, the remaining data is added together and divided by the number of values remaining after trimming. This results in the trimmed mean, which provides a more accurate representation of the average without being affected by outliers. The formula for calculating the trimmed mean is:

Trimmed Mean = (Sum of remaining values after trimming) / (Number of values remaining after trimming)

Calculate a Trimmed Mean (Step-by-Step)

A trimmed mean is the mean of a dataset that has been calculated after removing a specific percentage of the smallest and largest values from the dataset.

To calculate a X% trimmed mean, you can use the following steps:

Step 1: Order each value in a dataset from smallest to largest.

Step 2: Remove the values in the bottom X% and top X% of the dataset.

Step 3: Calculate the mean of the remaining values.

The following examples show how to calculate a trimmed mean in practice.

Example 1: Calculate a 10% Trimmed Mean

Suppose we have the following dataset:

Dataset: 4, 8, 12, 15, 9, 6, 14, 18, 12, 9

Here is how to calculate the 10% trimmed mean for the dataset:

Step 1: Order each value in a dataset from smallest to largest.

Ordered Dataset: 4, 6, 8, 9, 9, 12, 12, 14, 15, 18

Step 2: Remove the values in the bottom 10% and top 10% of the dataset.

There are 10 total values in the dataset. Thus, $10\% * 10 = 1$. This means we need to remove the one smallest value and one largest value from the dataset:

Trimmed Dataset: 6, 8, 9, 9, 12, 12, 14, 15

Step 3: Calculate the mean of the remaining values.

$10\% \text{ trimmed mean} = (6+8+9+9+12+12+14+15) / 8 = 10.625$

Example 2: Calculate a 20% Trimmed Mean

Suppose we have the following dataset:

Dataset: 22, 25, 29, 11, 14, 18, 13, 13, 17, 11, 8, 8, 7, 12, 15, 6, 8, 7, 9, 12

Here is how to calculate the 20% trimmed mean for the dataset:

Step 1: Order each value in a dataset from smallest to largest.

Ordered Dataset: 6, 7, 7, 8, 8, 8, 9, 11, 11, 12, 12, 13, 13, 14, 15, 17, 18, 22, 25, 29

Step 2: Remove the values in the bottom 20% and top 20% of the dataset.

There are 20 total values in the dataset. Thus, $20\% * 20 = 4$. This means we need to remove the four smallest values and four largest values from the dataset:

Trimmed Dataset: 8, 8, 9, 11, 11, 12, 12, 13, 13, 14, 15, 17

Step 3: Calculate the mean of the remaining values.

$$\mathbf{20\% \quad \quad \quad \text{trimmed} \quad \quad \quad \text{mean} \quad \quad \quad =}$$
$$\mathbf{(8+8+9+11+11+12+12+13+13+14+15+17) / 12 = 11.9167}$$

The 20% trimmed mean is 11.9167.

Bonus Resource: [Trimmed Mean Calculator](#)

If you have an extremely large dataset and do not want to calculate a trimmed mean by hand, feel free to use this .

For example, here's how to use this calculator to find the 20% trimmed mean from the previous dataset:

Dataset values:

22, 25, 29, 11, 14, 18, 13, 13, 17, 11, 8, 8, 7,
12, 15, 6, 8, 7, 9, 12

Trimmed Mean Percentage (%):

20

CALCULATE

Trimmed Mean: **11.9167**

Notice that the 20% trimmed mean matches the value that we calculated by hand.