Mean Absolute Deviation

The mean absolute deviation of a set of data is the mean of the absolute differences between each element in the set of data and the mean of the data.

Let's look at the given problem situation. Jonathan recorded the number of miles he traveled during the first five trips he took in his new car. Since Jonathan's set of data only contains five elements, the mean absolute deviation is a nice way to look at the variability or distribution of the data.

Since the mean absolute deviation is the distance a data element is from the mean, calculate the mean number of miles traveled on each trip. The mean of the data is 15; therefore, Jonathan traveled an average of 15 miles per trip.

Next, determine the distance of each data element from the mean by calculating the absolute difference from the mean for each data point. To determine the absolute difference for each data point, determine the absolute value of the difference between the data point and the mean. For example, consider the data element 15. Determine the difference between 15, the data element, and 15, the mean, and then determine the absolute value of the difference.

Once you have determined the absolute difference for each data element, calculate the average of the absolute differences by dividing the sum of the absolute differences by the number of elements.

As you can see with this set of data, the mean absolute deviation is six point four.

This means that the data points on average, are about six point four units from the mean.

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