**Mean Absolute Deviation (MAD) NOTES Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Another way to describe the variability of a data set is to use the Mean Absolute Deviation (MAD). To find MAD, you follow these steps:

1. Find the \_\_\_\_\_\_\_\_ of the data set.
2. Find the distance between the mean and the data values by \_\_\_\_\_\_\_\_\_\_\_\_\_ the mean from *each* data point.
3. Find the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ of each of those values.
4. Find the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of those differences.

Example: The table shows the maximum speeds for 8 roller coasters. Find the MAD.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 58 | 88 | 40 | 60 | 72 | 66 | 80 | 48 |

1) Find the mean of the data set.

2) Subtract the mean from each of the points in the original data set.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 58 | 88 | 40 | 60 | 72 | 66 | 80 | 48 |
| - | - | - | - | - | - | - | - |
|  |  |  |  |  |  |  |  |

3) Find the absolute value of each of those points.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |

4) Find the mean of the data in step #3.

So the Mean Absolute Deviation (MAD) of the 8 roller coasters is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Pause the video and try these on your own!**

**Then press play and check your answers with a color pen**

**Question #1:** The table shows the average number of hours sleeping. Find the MAD.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | 6 | 8 | 7 | 10 | 12 | 6 | 5 |

1) Find the mean of the data set. (Do NOT round)

2) Subtract the mean from each of the points in the original data set.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | 6 | 8 | 7 | 10 | 12 | 6 | 5 |
| - | - | - | - | - | - | - | - |
|  |  |  |  |  |  |  |  |

3) Find the absolute value of each of those points.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |

4) Find the mean of the data in step #3.

The Mean Absolute Deviation (MAD) of the average number of hours sleeping is \_\_\_\_\_\_\_\_\_\_\_

Round to the nearest hundredth

**Question #2**

Find the MAD of the following data: 33, 36, 42, 35, 37, 40, 41

Mean of the data (round to the nearest tenth): \_\_\_\_\_\_\_\_\_\_\_\_

Mean Absolute Deviation(round to the nearest tenth): \_\_\_\_\_\_\_\_\_\_

**Question #3**

Without looking at your notes, what are the steps to finding the Mean Absolute Deviation?

1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_