

LESSON 34: Dot Plots and Measure of Variability with Mean Absolute Deviation

Here is the key to **S431**.**Homework**

Name _____ Date _____

Directions: Use the data from the SOLVE problem from the beginning of the lesson to determine the MAD.

Ms. Martina recorded math scores of 90, 88, 85, 81, 91, 95, 87, 89, 85, 50, and 90 | ~~for her students on a test yesterday.~~ | She wants to determine the mean and MAD of the students' scores.

S Underline the question.

This problem is asking me to find **the mean and MAD of the students' scores.**

O Identify the facts.

Eliminate the unnecessary facts.

List the necessary facts. **Math scores**

L Write in words what your plan of action will be.

- **Put the scores in order from least to greatest.**

- **Find the sum of the scores and then divide by the number of scores.**

- **Find the MAD by determining the absolute deviation of each data value and then adding and dividing to determine the MAD.**

Choose an operation or operations. **Addition, division**

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Directions: Use the data from the SOLVE problem from the beginning of the lesson to determine the MAD.**V** Estimate your answer. **mean: about 80; MAD about 5**

Carry out your plan.

$$50 + 81 + 85 + 85 + 87 + 88 + 89 + 90 + 90 + 91 + 95 = 931;$$

$$931 \div 11 = 85 \text{ mean}$$

Data Value	Deviation from Mean	Absolute Deviation
50	-35	35
81	-4	4
85	0	0
85	0	0
87	2	2
88	3	3
89	4	4
90	5	5
90	5	5
91	6	6
95	10	10
Total of absolute deviation values		74
MAD (mean absolute deviation)		6.73

E Does your answer make sense? (Compare your answer to the question.) **Yes, because I was looking for the mean and MAD of the math scores.**Is your answer reasonable? (Compare your answer to the estimate.) **Yes, because it is close to my estimates of about 80 for the mean and about 5 for the MAD.**Is your answer accurate? (Check your work.) **Yes.**Write your answer in a complete sentence. **The mean of the math scores is 85. This means the average of the math scores for the 11 students is 85. The MAD of the data set is 6.73. This means that, on average, the student scores vary by 6.73 points from the mean of 85.**