

Lesson Summary

A data distribution can be described in terms of its center, spread, and shape.

- The center can be measured by the mean.
- The spread can be measured by the mean absolute deviation (MAD).
- A dot plot shows the shape of the distribution.

Problem Set

1. Draw a dot plot of the times that five students studied for a test if the mean time they studied was 2 hours and the MAD was 0 hours.
2. Suppose the times that five students studied for a test are as follows:

Student	Aria	Ben	Chloe	Dellan	Emma
Time (hours)	1.5	2	2	2.5	2

Michelle said that the MAD for this data set is 0 hours because the dot plot is balanced around 2. Without doing any calculations, do you agree with Michelle? Why or why not?

3. Suppose that the number of text messages eight students receive on a typical day is as follows:

Student	1	2	3	4	5	6	7	8
Number of Text Messages	42	56	35	70	56	50	65	50

- a. Draw a dot plot for the number of text messages received on a typical day for these eight students.
- b. Find the mean number of text messages these eight students receive on a typical day.
- c. Find the MAD for the number of text messages, and explain its meaning using the words of this problem.
- d. Describe the shape of this data distribution.
- e. Suppose that in the original data set, Student 3 receives an additional five text messages per day, and Student 4 receives five fewer text messages per day.
 - i. Without doing any calculations, does the mean for the new data set stay the same, increase, or decrease as compared to the original mean? Explain your reasoning.
 - ii. Without doing any calculations, does the MAD for the new data set stay the same, increase, or decrease as compared to the original MAD? Explain your reasoning.