Lesson 10: Describing Distributions Using the Mean and MAD

Problem Set

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Student | Aria | Ben | Chloe | Dellan | Emma |
| Time (hrs.) |  |  |  |  |  |

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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student |  |  |  |  |  |  |  |  |
| Number |  |  |  |  |  |  |  |  |

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