Math CDC

-Kylie Kilpatrick

Mrs. Joshi's class

1

Prompt

Will the mean or median increase if the last number on the data set is increased?

Claim

The mean will increase if the last number increases and the median will not increase if the last number increases.

Data

Mean

not increased

$\frac{1+2+3+4+5}{5} = 3$

increased

$\frac{1+2+3+4+100}{5} = 22$

Median

not increased

3, 5, 2, 1, 4

order least to greatest: 1, 2, 3, 4, 5

increased

1, 2, 3, 4, 100

Commentary

As I said in the claim, the mean will increase if the last number increases, and the median will not increase if the last number increases. Let's start with the mean. To find the mean you start by adding all the numbers together. Then, you divide. To know what to divide it by you count how many numbers you're adding. That is what you divide by.

Next Page

Commentary Continued

After you divide you got your answer. Now that we know how to find mean let's start. First, the not increased. We are going to use numbers 1, 2, 3, 4, and 5. Add them up to get 15. Then you divide it by 5 because there is 5 numbers we are adding together. We end up getting 3. For the increased number we are making 5 to 100. First, we add 1, 2, 3, 4, 100 to get 110. Then you divide 110 by 5 to get 22. As you can see the increased mean's number (22) is bigger than the non-increased mean's number (3).

Now we are moving on to median. To find the median we start by lining the numbers up from least to greatest or asending order. That is the most important step. A little trick to know is that if the number of numbers we're using is odd then we will have one median but, if the number of numbers we use are even then, we'll have 2 medians. What to do with the 2 medians is add them up then divide the added number by 2. Now that you know how to find the median let's start with the non-increased. We have the numbers 3, 5, 2, 1, 4. Next Page

Commentary Continued

First, we order them from least to greatest to get 1, 2, 3, 4, 5. We start with the outside and cross the numbers of until we get to the middle. Hints why median means middle. The number we end up getting is 3 because 3 is in the middle. Now, we are going to increase 5 to 100. We still order least to greatest to get 1, 2, 3, 4, 100. Once we get to the middle we get 3 still. So the increased median's number (3) is the same as the non-increased median's number (3). So in conclusion we see that the median will not increase if the last number increases and the mean will increase if the last number increases.