CDC Writing

Vineet
Vadrevu
Mrs. Joshi
Block 9

Prompt: Will the mean or median increase if the last number in the data set is increased

Claim: Will the mean will increase because all of the numbers are used to find the answer and if it is an outliner the answer will get dragged down even more but with the medium it doesn't matter unless you add a number to the data set.

Data: to demonstrate I'll work out a problem below

median with increased number

1, 2, 3, 4, 5, 6, 100

Slowly cross out numbers → 4 is the median

without increased number

1, 2, 3, 4, 5, 6, 7

4 is still the median

to do median just find the middle number and if there is an even number of numbers find the average of the 2 middle numbers

Vineet
Vadrevu
Block
B
Mrs. Josh.

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The evidence above shows how even if you increase a number the median doesn't change because the median is only the middle number the only thing that will affect the median is if you take a number away from the data set or if you add extra data. Below I will do the mean with and without the increased number.

with increased number / outlier

$$\frac{1+2+3+4+5+6+100}{7}$$

$$\frac{121}{7}$$ now do 121÷7 which equals 17.28

To find mean add all of the numbers then divide by how many numbers you added

and that is the average (17.28) with the increased number / outlier

with out outlier / increased number

$$\frac{1+2+3+4+5+6+7}{7}$$

$$\frac{28}{7} = 4$$ 28 divided by 7 equals (4)

So with the outlier the answer is 4

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Vireet Vadrevu
Mrs. Fash
Block D

The evidence proves that when you increase the number the median does not change because it is the middle number and increasing a number won't affect the median at all but then mean will definatly be affected because it is the average of all the numbers which includes all the outlier which can drag the number down or increase the number. in this case increase

When a number is increased in a data set the mean will be affected but the median will not.