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Ch 3. Homework Problems.

#1. State the statistical notation for each of the following terms:

(a) Population size N

(b) Sample size n

(c) Population mean 'μ'

(d) Sample mean x

#5. List five characteristics of the mean.

1. Changing one number will change the mean.
2. Adding numbers or removing them will change the mean.
3. the sum of mean is always equals to zero
4. It can be more sensitive to extreme data values than the median.
5. The mean will always exist, but it might not be an actual data value.

#9. The mode is an appropriate measure for describing what types of data?

The Mode is used to describe other measures for modal distribution and for nominal data

#13. A researcher records the number of hours (per week) that single mothers spend at work and states that the data are distributed normally. Which measure of central tendency is most appropriate for describing these data?

Using Mean is the most appropriate for describing this data.

#17. A sport psychologist uses the body mass index (BMI) score to measure health in a sample of 60 athletes and determines that 20 are healthy, 26 are overweight, and 14 are obese. Which measure of central tendency is most appropriate for describing these data?

The central tendency most appropriate for describing this data is the median.

#21. Base on the scale of measurement for each variable listed below, which measure of central tendency is most appropriate for describing data?

(a) The time (in years) it takes a sample of students to graduate school
The mean

(b) The blood type (e.g., Type A, B, AB, O) of a group of participants

The mode

(c) The rankings of college undergraduate academic program

The Range

#25. The researchers realize that the scale was not accurate for the individual weighing 300 pounds, so they reweight that individual and record 250 pounds. Will the mean increase or decrease in this situation?

The mean would decrease throughout this situation.

#27. Using the original example of five weights, 200, 250, 150, 100, and 300 pound, the researchers add a sixth participant to the sample. The mean is 200 pounds.

(a) If the sixth participant weighs 240 pounds, will the mean increase, decrease, or not change?

The mean will increase.

(b) If the sixth participant weighs 200 pounds, will the mean increase, decrease, or not change?

The mean will not change.

(c) If the sixth participant weighs 180 pounds, will the mean increase, decrease, or not change?

The mean will decrease.