# ***Assignment Name - Concepts of Statistics***

1. ***If the variance of a variable/column is 0 then what does it mean? Can we use that variable for our analysis?***

Answer:- The variance of a variable is zero denotes the difference between the value of the variable and its mean is zero. Set of points is not spread far from its mean. In an ideal case , if all four outcomes of any random sample is 5 , then the mean will be 5 and the difference between the mean and the value are always zero so that the variance will also be zero .  
   
We can use zero variance as this means all the value of the variable in that data sample is same or constant i.e. mean, median, mode will be same and we can get the accurate measure of the value.

1. ***Calculate mean, median, mode, variance and standard deviation for column A.***

* Mean will be , ∑ (7+6+7+7+8+5+8+7+7+5+5) / 11 = 72/11 = 6.545 .
* We know Median is the fifth percentile, here in Column A we have 11 values so the according to the definition 6th position of this column is the Median which is having value 5.
* Mode is the score that occurs frequently in a nominally scaled data set. In column A , we can see the score 7 occurred five times , 5 occurred three times, 8 occurred two times and 6 occurred one time . Hence , we can say 7 is the Median of Column A.
* Variance =

] / 11

(0.207 + 0.297 + 0.207 + 0.207 + 2.117 + 2.387 + 2.117+ 0.207 + .207+2.387+2.387)/ 11

= > 1.157 (Answer).

* Standard Deviation is s =

=

= = 1.128 (Answer).

1. ***In a group of 12 scores, the largest score is increased by 36 points. What effect will this have on the mean of the scores?***

Answer:- Suppose for 12 scores having a mean lets x . So the summation of the variable is 12x . If the largest score increases by 36, the summation will be (12x+36). So the mean will be [(12x+36)/12] = x+3. Hence, the mean will increase by 3. (Answer)

1. ***Explain the difference between Data (Singular) and Data (Plural) with examples?***

Answer:- The value of the variable associated with one element of a population or sample is called a Data Singular .In the other hand, the set of values collected for a variable from a sample or population is called Data Plural .

Example:- If we consider the problem statement 2 , the value 6 is the value of one element of the data set of Column A , this is an example of Data Singular.   
 Similarly, the set of values of Column A = {7,6,7,7,8,5,8,7,7,5,5} is Data Plural.

1. ***How the inferential statistics helps to make decisions out of it?***

***Answer:-*** The inferential statistics use a random sample of data taken from a population to describe and make inferences about the population. This part of statistics uses where the count of total population is not possible.   
 For an example, it is not possible to measure the marks of all the students of a country. So for this case, a sample of 100 students from a school is being taken to give a measure of all the students of the country. In this term, it is important that the sample should accurately represents the population to give accurate measure.