Statistics - Scholarship test

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Email address *

_____

Sample observations were taken between x and y as follows. X = 6,11,15,21,27 and Y=6,9,6,17,12. Compute the covariance and correlation coefficient

3 points

○ 26.5,0.793

○ 26.5,0.693

○ 25.5,0.693

○ 26,0.693

A pharma company manufactures thousands of tablets every day. The manufacturing team gets a complaint stating that the weight of a tablet named zingx has changed from its actual claimed weight of 100mg with population standard deviation 20. The company wants to test this and submit a report to the concerned authority stating the proof of this complaint. The company takes 50 samples with mean 105 to test this. What is the Null and alternate hypothesis?

○ HO = 100 and Ha ≠ 105

○ HO = 100 and Ha < 105

○ HO = 100 and Ha ≠ 100

○ HO = 105 and Ha ≠ 105

Using the above data what is the probablity of CSK winning 2 points
IPL 2018 or CSK winning Champions trophy 2018

○ 0.5

○ 0.62

○ 0.72

○ 0.92

○ Other: ....

A case study to find out a patient's probability of having liver disease if they are an alcoholic. Patient has liver disease - Past data tells you that 25% of patients entering your clinic have liver disease. Patient is an alcoholic - Five percent of the clinic's patients are alcoholics. Among those patients diagnosed with liver disease, 10% are alcoholics.

3 points

○ 0.75

○ 0.5

○ 0.4

○ None of the above

What is the range of correlation coefficient ?

1 point

○ -1 to +1

○ -∞ to + ∞

○ 0 to 1

○ None of the above

If a population consists of distinct 5000 records sorted between 50 and 5050 and if the last 10 samples are taken for analysis. What is the range of the sample ?

1 point

○ 5000

○ 4999

○ 10

○ 5001

The California university performs the hypothesis test for the same scenario as Ohio university on 6 samples with the population mean as 900 with samples as 935,925,850,875,945,915. What is the result?

3 points

○ Calculated value 2.53, Reject the Null hypothesis

○ Calculated value 2.57, Accept the Null hypothesis

○ Calculated value 2.53, Accept the Null hypothesis

○ Calculated value 2.57, Reject the Null hypothesis

If the value 18 in Q6 (Millions of Americans work from home during office hours and following is a sample data of individuals who work at home - 18,54,20,46,25,48,53,27,26,37,40,36,42,25,27,33,28,40,45,25) is replaced with 38, the standard deviation ?

1 point

○ Increases

○ Decreases

○ remains same

○ None of the above

Using the above data what is the probablity of CSK winning IPL 2018 and not winning Champions trophy 2018

2 points

○ 0.32

○ 0.5

○ 0.92

○ 0.62

The median age of population of all adults is 36 years. Using the median age obtained in Q6 (Millions of Americans work from home during office hours and following is a sample data of individuals who work at home - 18,54,20,46,25,48,53,27,26,37,40,36,42,25,27,33,28,40,45,25) comment whether the at-home workers tend to be younger or older than the population of adults ?

1 point

- ○ At home workers are slightly younger

- ○ At home workers are slightly older

- ○ At home workers are same as population

- ○ All of the above

When 2 coins are tossed and the probability of getting 2 heads is 0.25 what is the size of sample space ?

1 point

- ○ 2

- ○ 4

- ○ 8

- ○ 1

A similar sample of seven Western US cities showed a sample mean of $ 38 per day and variance and SD as 93, 9.64. What can you infer from this ?

2 points

- ○ Western shows more variation

- ○ Eastern shows more variation

- ○ Eastern and western have high variations

- ○ All the above

Millions of Americans work from home during office hours   1 point
and following is a sample data of individuals who work at
home
18,54,20,46,25,48,53,27,26,37,40,36,42,25,27,33,28,40,45,25
Find the Mean and mode?

○ 34.75,25

○ 31.75,25

○ 25,25

○ 34.75,27

CSK winning IPL 2018 (0.8 probablity) SRH winning IPL   1 point
2018 (0.2 probablity) CSK winning Champions trophy 2018
(0.6 probablity) SRH winning Champions trophy 2018 (0.4
probablity) In the above events what are the mutually
exclusive events?

○ 1 & 3

○ 1 & 4

○ 3 & 4

○ None of the above

The sales report about the pharmaceutical company in million $ for the 21 states in US has been provided 8408,1374,1872,8879,2459,11413,608,14138,6452,1850,2818,1356,10498,7478,4019,4341,739,2127,3653,5794,8305.
1. Provide the five number summary of the box plot(min,Q1,Q2,Q3,max)

○ 608,1872,5019,8305,14138

○ 608,1872,4039,8305,14138

○ 608,1862,4019,8305,14138

○ 608,1872,4019,8315,14138

○ 608,1872,4019,8335,14138

○ None of the above

Twenty four people had a blood test and the results are shown below. A , B , B , AB , AB , B , O , O , AB , O , B , A, AB , A , O , O , AB , O , O , A , AB , O , B , A. If a person is selected randomly from the group of twenty four people, what is the probability that his/her blood type is not O?

○ 0.5

○ 0.567

○ 0.667

○ 0.75

Using the sample data from Q6 (Millions of Americans work from home during office hours and following is a sample data of individuals who work at home - 18,54,20,46,25,48,53,27,26,37,40,36,42,25,27,33,28,40,45,25)compute the first and third quartile ?

2 points

○ 25.5,43.5

○ 24.5,43.5

○ 25.75, 42.75

○ 25.75,42.75

○ Other: _____

Which test to be performed when we have only the mean of population and sample is greater than 30 ?

1 point

○ T test

○ Z test

○ F test

○ Anova

At Ohio University the mean score of scholarship exam for **2 points**
fresh applications is 900 and the population standard
deviation is 180. Every year the HOD uses sample
applications to determine the change in the examination
score. A sample of 200 applications with a sample mean of
935 is used to perform hypothesis test. What is the result ?

○ Calculated value 2.5, Reject the Null hypothesis

○ Calculated value 2.74, Accept the Null hypothesis

○ Calculated value 2.64, Reject the Null hypothesis

○ Calculated value 2.74, Reject the Null hypothesis

From the above does the data contain any outlier   **2 points**

○ Yes

○ No

○ Maybe

In a Normal distribution   **1 point**

○ mean > median > mode

○ median > mean > mode

○ mean = median = mode

○ All the above

Compute the IQR, lower and upper limits from the above

3 points

○ 6433,-7767.5,17955

○ 6443,-7777.5,17955

○ 6433,-7777.5,17975

○ 6433,-7777.5,17955

1.The Sum of probabilities of all events is 1 2. The probability lies between -1 to +1 3. In a mutually exclusive event P(AnB) = 1 4. In a mutually exclusive event P(AUB) = 1 From the above please check the appropriate option

1 point

○ 1 & 2 are True

○ 1 & 3 are True

○ 1 & 4 are True

○ None of the above

What is the relation between Standard Deviation and variance when the sample is less than 30?

1 point

○ The SD is directly proportional to variance

○ The SD is variance/(Sqrt(n))

○ The SD is the Sqrt(variance)

○ More than one correct answer

Identify the variables that are continuous or discrete?

1 point

- ○ Time & country are continuous. Weight & colour are discrete

- ○ Weight & colour are continuous. Time & country are discrete

- ○ Time & country & weight & colour are continuous

- ○ Time & weight are continuous. Country & colour are discrete

Ohio state has the highest sales at $14,138 million. Suppose a data entry error has been made as $ 41,138 million. Would this been identified as an outlier and corrected ?

3 points

- ○ No, 41,138 would not be an outlier

- ○ Yes, 41,138 would be an outlier

- ○ Depends on IQR value

- ○ None of the above

A sample of size 50 is drawn from a population of mean 100 and Standard deviation 25. What is the Standard deviation of the sample ?

1 point

- ○ 2.53

- ○ 3.23

- ○ 4.53

- ○ 3.53

Car rental rates per day for a sample of seven Eastern US cities are as follows City Boston Dallas Atlanta Ohio New York Miami Pittsburgh Rate ($) 43 35 34 58 30 30 36. Compute the Mean, variance, standard deviation for the car rental rates

2 points

○ 38, 97, 9.85

○ 38, 95, 9.85

○ 28, 97, 9.85

○ 38, 97, 9.65

In a hotel on an average 10 customers visit in an hour. What is the distribution for identifying the probability of 20 customers visiting in an hour. Identify the probability distribution

1 point

○ Geometric

○ Poisson

○ Binomial

○ Exponential

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