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Is there any difference between distribution function and cumulative distribution function of discrete r.v.  $X$ ?

Answer ( [Please click here to Add Answer](#) )

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**The distribution function of a random variable  $X$ , denoted by  $F(x)$ , is defined by  $F(x) = P(X \leq x)$ .**

**The function  $F(x)$  gives the probability of the event that  $X$  takes a value LESS THAN OR EQUAL TO a specified value  $x$ . The distribution function is abbreviated to *d.f.* and is also called the *cumulative distribution function (cdf)* as it is the cumulative probability function of the random variable  $X$  from the smallest value upto a *specific* value  $x$ .**

**Let us illustrate this concept with the help of the same example that we have been considering --- that of the probability distribution of the sum of the dots when two fair dice are thrown.**

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What is meant by sampling distribution of sample proportion?

Answer ( [Please click here to Add Answer](#) )

VuAnswers.com



**The probability distribution of any statistic (such as the mean, the standard deviation, the proportion of successes in a sample, etc.) is known as its sampling distribution.**

**The sample proportion has different values in different samples.**

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If an automobile is driven on the average no more than 16000 Km per year then formulate the null and alternative hypothesis.

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

While applying the chi-square goodness of fit test, if an expected frequency in any category is less than 5, then what we do to solve this problem.

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

Write a short note on Quota Sampling.

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

Write down the properties of hypergeometric distribution.

Answer ( [Please click here to Add Answer](#) )

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- The probability of success changes on each trial.
- The successive trials are not independent.
  - The experiment is repeated a fixed number of times.

**Made by: Waqar Siddhu**

Write down critical region for the following hypothesis at 5% level of significance.

$$H_0 : \mu = 75$$

$$H_1 : \mu < 75$$

Answer ( [Please click here to Add Answer](#) )

VuAnswers.com



A rich text editor toolbar with various icons for file operations (New, Open, Save, Print, Find, Copy, Paste, Undo, Redo), editing (Bold, Italic, Underline), and alignment (Left, Center, Right, Justify). It also includes a font color selector, a font size dropdown set to 12, and a zoom level dropdown set to 100%.

Made by: Waqar Siddhu



For the following table we want to test the independence of smoking pattern and marital status. What will be the degrees of freedom for the chi-square test of independence?

Marital Status	Smoking Pattern			Total
	Total self-restraint	Only at times	Regular Smoker	
Single	67	213	74	354

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

Married	411	633	129	1173
Widowed	85	51	7	143
Divorced	27	60	15	102
Total	590	957	225	1772

Answer ( [Please click here to Add Answer](#) )

VuAnswers.com



A rich text editor toolbar with various icons for file operations (New, Open, Save, Print, Find), editing (Cut, Copy, Paste, Undo, Redo), and formatting (Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent). It also includes a font face dropdown (Normal, Arial), a font size dropdown (12), and a zoom level dropdown (100%).

Made by: Waqar Siddhu

Answer the following question using the given stem and leaf plot of the ages of the people who attended a musical event.

Stem	Leaf
1	2 2 3 3 4 4 5 5 5 5 5 5 6 6 6 6 6 6 7 7 7 7 7 8 8 9 9
2	3 3 4 8
3	6

Answer ( [Please click here to Add Answer](#) )

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2	3 3 4 8
3	6
4	5 8

- a) How many people attended the event?  
b) What is the age of youngest attendee?

Answer ( [Please click here to Add Answer](#) )

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- How many people attended the event?
- What is the age of youngest attendee?
- What was the age of oldest person attending event?
- Which age group was more widely represented?
- How many people were above 30?

Answer ( [Please click here to Add Answer](#) )

**VuAnswers.com**



**Made by: Waqar Siddhu**

If  $\bar{X}$  is normally distributed with  $\mu_{\bar{X}} = \mu = 24000$  and  $\sigma_{\bar{X}} = 412.20$   
then find out the  $P(\bar{X} > 24500)$ .

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

If we have  $\bar{X} = 15$  and  $\sum_{i=1}^{10} (X_i - \bar{X})^2 = 56$

Then, find the 90% confidence interval for population variance ( $\sigma^2$ ).

Answer ( [Please click here to Add Answer](#) )

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A research worker wishes to estimate the mean of a population using a sample sufficiently large that the probability will be 0.95 that the sample mean will not differ from the true mean by more than 25 percent of the standard deviation. How large a sample should be taken?

Answer ( [Please click here to Add Answer](#) )

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What does quartile deviation measure in a distribution?

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

In a random sample of 1000 women in a locality, 224 women said that they use Aerial washing powder. What is the point estimator and point estimate of the proportion of the women who use Aerial washing powder?

Answer ( [Please click here to Add Answer](#) )

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What is the impact of level of confidence  $(1-\alpha)$  on the value of  $Z_{\alpha/2}$ ?

Answer ( [Please click here to Add Answer](#) )

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Formulate the hypothesis in case of goodness of fit test.

Answer ( [Please click here to Add Answer](#) )

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Why the median is suitable average for the below data set? Explain.

Monthly income (in rupees)	No. of workers
Less than 2000/-	100
2000/-to 2999/-	300

Answer ( [Please click here to Add Answer](#) )

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(in rupees)	
Less than 2000/-	100
2000/-to 2999/-	300
3000/- to 3999/-	500
4000/- to 4999/-	250
5000/- and above	50

Answer ( [Please click here to Add Answer](#) )

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If  $Z$  is a standard normal random variable with mean 0 and variance 1, then find the Lower quartile.

Answer ( [Please click here to Add Answer](#) )

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Write down critical region for the following hypothesis at 5% level of significance.

$$H_0: \mu = 75$$

$$H_1: \mu < 75$$

Answer ( [Please click here to Add Answer](#) )

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The manager of a bottling plant is anxious to reduce the variability in net weight of fruit bottled. Over a long period, the standard deviation has been 15.2 gm. A new machine is introduced and the net weights (in grams) in 10 randomly selected bottles (all of the same nominal weight) are 987, 966, 955, 977, 981, 967, 975, 980, 953, and 972. State null and alternative hypothesis that machine has a better performance? Also write down test-statistics about the hypothesis.

Answer ( [Please click here to Add Answer](#) )

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Find the coefficient of standard deviation from the following data:

Life in Hours ( $X$ ): 130, 150, 180, 250, 345

Answer ( [Please click here to Add Answer](#) )

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What is the probability that a poker hand of 5 cards contain (i) exactly 2 aces (ii) exactly 1 ace?  
(Use hypergeometric distribution)

Answer ( [Please click here to Add Answer](#) )

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If  $n=22$ ,  $\sum (d - \bar{d})^2 = 270$ ,  $\bar{d} = 4$

Then, using a 0.05 level of significance level, test the hypothesis  $H_0: \mu_d = 0$  against  $H_1: \mu_d \neq 0$

Answer ( [Please click here to Add Answer](#) )

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A company launched new layout of its website. After a survey, 62 of 115 visitors liked the new layout while 59 of 135 visitors liked the old layout of the website. Company claims that new layout did not improve the visitor's liking about the website.

By using the critical value  $Z < -Z_{0.05} = -1.645$ , verify the company's claim:

$$H_0: P_1 - P_2 \geq 0$$

$$H_1: P_1 - P_2 < 0$$

Answer ( [Please click here to Add Answer](#) )

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Name the measures of dispersion that are not based on all the values.

Answer ( [Please click here to Add Answer](#) )

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When we use two-tailed test?

Answer ( [Please click here to Add Answer](#) )

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**test :**

**A hypothesis test in which rejection of the null hypothesis occurs for values of the test statistic in either tail of the sampling distribution.**

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For a sample data  $n = 15$ , calculate  $t_{\frac{\alpha}{2}(v)}$  for  $\alpha = 0.10$ .

Answer ( [Please click here to Add Answer](#) )

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Suppose we want to determine the proportions of smokers and non smoker in a city? In this situation what type of distribution we can use?

Answer ( [Please click here to Add Answer](#) )

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following proportions, we are dealing with a **BINOMIAL** situation:

- Proportion of smokers in a city smoker → success, non-smokers → failure.
- Proportion of literates in a community → literacy rate, literate → success, illiterate → failure.
- Proportion of males in a city → *sex ratio*).

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If mean of a distribution is 20 and standard deviation is 2. Find out  $\mu \pm 2\sigma$  limits by applying empirical rule. What percent of data will lie between these two limits?

Answer ( [Please click here to Add Answer](#) )

VuAnswers.com



*calculate app keroo hun*

**According to this empirical rule:**

- **Approximately 68% of the measurements will fall within 1 standard deviation of the mean, i.e. within the interval  $(-X - S, -X + S)$**
- **Approximately 95% of the measurements will fall within 2 standard deviations of the mean, i.e. within the interval  $(-X - 2S, -X + 2S)$ .**
- **Approximately 100% (practically all) of the measurements will fall within 3 standard deviations of the mean, i.e. within the interval  $(-X - 3S, -X + 3S)$ .**

**Made by: Waqar Siddhu**

Suppose  $X$  is a random variable having Poisson distribution with its parameter value 3, find value of  $P(X=1)$ .

Answer ( Please [click here](#) to Add Answer )

VuAnswers.com



The Poisson distribution has only one parameter  $\mu > 0$ .

$\mu=3$   $X=1$ )

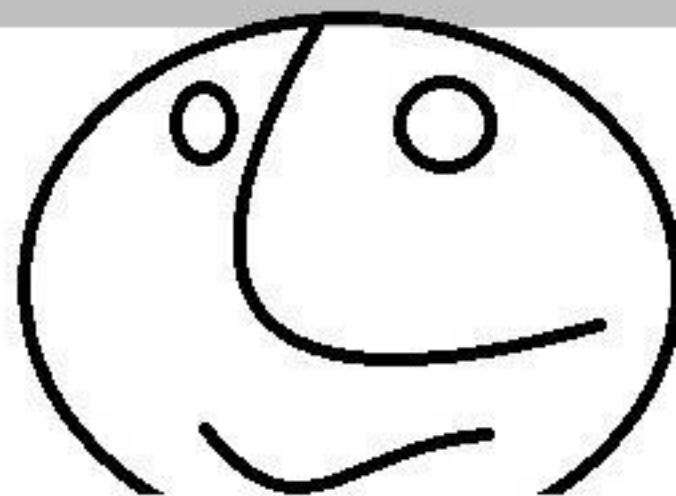
$$\lim_{\substack{n \rightarrow \infty \\ p \rightarrow 0}} b(x; n, p) = \frac{e^{-\mu} \mu^x}{x!}, \quad x = 0, 1, 2, \dots, \infty$$

where  $e = 2.71828$ .

&

$p$  is 0.05 or less,  
 $n$  is 20 or more,

calculate easily now..



Made by: Waqar Siddhu

If  $X = 341$ ,  $n = 634$ ,  $p_0 = 0.50$  then find the z-test statistic for proportion.

Answer ( Please [click here](#) to Add Answer )

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**Step 3:**  
Test statistic:

$$Z = \frac{X \pm \frac{1}{2} - n p_0}{\sqrt{n p_0 (1 - p_0)}}$$

**Step 4:**  
Computation:

Here  $np_0 = 634 (0.50) = 317$   
and  $X = 341$   
Hence  $X > np_0$  so use  $X - \frac{1}{2}$

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$$\text{So } Z = \frac{341 - \frac{1}{2} - 317}{\sqrt{634(0.50)(0.50)}} = \frac{23.5}{12.59}$$

= 1.87

Made by: Waqar Siddhu

A random sample of size  $n$  is drawn from normal population with mean 5 and variance  $\sigma^2$ . If  $s=2.5$ ,  $\bar{x}=7$  and  $t=3$ , then what is the value of  $n$ ?

Answer ( [Please click here to Add Answer](#) )

VuAnswers.com



The test-statistic to be used is

$$t = \frac{\bar{X} - \mu_0}{s/\sqrt{n}}$$

here  $\mu = 5$ ...

where  $\mu$  is the population mean.  $n$  is the sample size.

ans should be approx 2. I think not sure :) because of the way the question is phrased.

Made by: Waqar Siddhu

A random variable  $X$  is normally distributed with  $\mu = 50$  and  $\sigma^2 = 25$ . Find the probability of  $X$  larger than 54.

Answer ( Please [click here](#) to Add Answer )

VuAnswers.com



The test-statistic to be used is

$$Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$$

here give sigma sq, take under root

sigma= 5    mue also give and X= 54 we find X>54

(54-50)/5= 4/5

its half ques see  
these type of ques  
70 % solve now.. 30  
% see table etc

Made by: Waqar Siddhu

Find the coefficient of variation (C.V) for the following price of a commodity.

Price (X): 8, 13, 18, 23, 30

Answer ( Please [click here](#) to Add Answer )

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### COEFFICIENT OF VARIATION

$$C.V. = \frac{S}{\bar{X}} \times 100$$

Shortcut Formula for Ungroup data

$$S = \sqrt{\left[ \frac{\sum x^2}{n} - \left( \frac{\sum x}{n} \right)^2 \right]}$$

mean ka formula laga laian X bar ki  
jaga.... =  $\bar{X}/n$   
small n is 5

Made by: Waqar Siddhu

The given data is  $n = 1150$ ,  $x = 450$ ,  $p = 0.39$ ,  $H_0 : p_0 = 0.3$ ,  $\alpha = 0.01$

Test the stated hypothesis. (Use table value of  $z = \pm 2.58$ )

Answer ( Please [click here](#) to Add Answer )

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Made by: Waqar Siddhu



Given,  $n_1 = n_2 = 16, s_1^2 = 50, s_2^2 = 16$ , Construct a 90% confidence interval for the variance ratio  $\frac{\sigma_1^2}{\sigma_2^2}$ .

Answer ( [Please click here to Add Answer](#) )

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regards i have no idea abou F test and this ques in the F test...  
remmber me in ur pry aer after 3 hr slove 1 paper.. :)

Made by: Waqar Siddhu

Describe the Poisson distribution as the limiting form of the binomial distribution.

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

Define Disjoint Sets.

VuAnswers.com

Answer ( Please [click here](#) to Add Answer )



Made by: Waqar Siddhu

What is acceptance region?

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

If there are  $K$  treatments and  $R$  rows in a Randomized Complete Block Design then calculate the total number of experimental units used.

Answer ( [Please click here to Add Answer](#) )

**VuAnswers.com**



**Made by: Waqar Siddhu**

In how many ways a three-person committee can be formed from a group of ten persons? (Use the formula)

Answer ( [Please click here to Add Answer](#) )

**VuAnswers.com**



**Made by: Waqar Siddhu**

From the given data, calculate mean and standard deviation of sampling distribution of mean if the sampling is done with replacement.

$$N = 120, n = 64, \mu = 50, \sigma = 2$$

VuAnswers.com

Answer ( [Please click here to Add Answer](#) )



Made by: Waqar Siddhu

Construct 90% confidence interval for the difference in means  $\mu_1 - \mu_2$  in case of paired observations, where

$$\bar{d} = 1.8, s_d = 1.32, t_{0.05(9)} = 1.833$$

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu



For a data  $X : N(\mu, \sigma^2)$ . Two unbiased estimators  $T_1$  and  $T_2$  have following variances

$$V(T_1) = \frac{11\sigma^2}{25}$$

$$V(T_2) = \frac{9\sigma^2}{25}$$

Answer ( [Please click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

A man travels on car from Lahore to karachi on Motor way in 8 stages of equal intervals. The speed of the car in the various stages was observed to be 110, 116, 120, 114, 115, 112, 120, 117 kilometers per hour. Find the average speed at which the car travels.

Answer ( [Please click here to Add Answer](#) )

**VuAnswers.com**



**Made by: Waqar Siddhu**

A random sample of size three is drawn without replacement from the population consisting of four numbers 4, 5, 5, 7. Sampling distribution of sample means is calculated as below;

Sample Means ( $\bar{X}$ )	$f(\bar{X})$
14/3	1/4
16/3	2/4
17/2	1/4

Answer ( Please [click here to Add Answer](#) )

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Made by: Waqar Siddhu

If  $n = 1150$ ,  $x = 450$ ,  $p = 0.39$ ,  $H_0 : p_0 = 0.5$ , and  $\alpha = 0.05$

Test the stated hypothesis.

(Use table value of  $z = \pm 1.96$ )

Answer ( Please [click here](#) to Add Answer )

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Made by: Waqar Siddhu

A personal manager is interested in trying to determine whether absenteeism is greater on some specific day of the week or not? His records for the past year show the following sample distributions.

Day of the week:	Monday	Tuesday	Wednesday	Thursday	Friday
No. of absentees:	66	57	54	48	75

Test goodness of fit.

Where test statistic *chi - square* =  $\sum \frac{(o_i - e_i)^2}{e_i} = 7.50$

Answer ( Please [click here to Add Answer](#) )

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**Made by: Waqar Siddhu**

In how many branches, estimation can be divided? Also write down the names of the branches.

Answer ( [Please click here to Add Answer](#) )

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A Sample has following values.

101, 99, 111, 199, 150, 140

Find out the maximum likelihood estimate of population mean.

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

Write down critical region for the following hypothesis.

$$H_0 : \sigma^2 = 20$$

$$H_1 : \sigma^2 < 20$$

Where,  $\alpha = 0.01$  and  $n=10$

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu



What is the concept of extrapolation in regression analysis?

Answer ( [Please click here to Add Answer](#) )

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If  $Z$  is a standard normal random variable with mean 0 and variance 1, then find the Lower quartile.

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

For the following table we want to test the independence of smoking pattern and marital status. What will be the degrees of freedom for the chi-square test of independence?

Marital Status	Smoking Pattern			Total
	Total self-restraint	Only at times	Regular Smoker	
Single	67	213	74	354

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

Find the proportion for the  $X_1$  and  $X_2$ , Where  $X_1 = 300$  with sample size =  $n_1 = 400$  and  $X_2 = 200$  with sample size =  $n_2 = 300$ .

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

Calculate class boundaries from the following data.

Age Group	f
20-29	2
30-39	4
40-49	5

Answer ( [Please click here to Add Answer](#) )

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A certain type of storage battery lasts on the average 3.0 years, with a standard deviation of 0.5 year. Assuming that the battery lives are normally distributed, find the probability that a given battery will last less than 2.3 years.

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu

For the Given information, what is your conclusion in testing the indicated null hypothesis?

$$n_1 = 13, n_2 = 41, s_1^2 = 6.3, s_2^2 = 15.6, H_0: \sigma_1^2 = \sigma_2^2 \text{ and } H_1: \sigma_2^2 > \sigma_1^2$$

Answer ( [Please click here to Add Answer](#) )

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In a random sample of 200 persons having their lunch at the University cafeteria on meatless day it was observed that 30 percent preferred vegetable dishes. Find 95% confidence interval for  $p$ .

Answer ( [Please click here to Add Answer](#) )

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Made by: Waqar Siddhu



Answer the following questions:

- i. Which method has been used for collecting the data in the following case?  
"An investigator collects the information personally from the individuals concerned".
- i. Find the sampling error when the population mean is 15.785 and sample mean is 15.6.
- ii. Write down any two types of nonrandom sampling
- iii. What is the singular of strata?

Answer ( [Please click here to Add Answer](#) )

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Write down the name of methods/techniques that are used to represent the quantitative discrete data.

Answer ( [Please click here to Add Answer](#) )

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A coin is tossed 900 times and heads appear 490 times. State the null and alternative hypotheses to show that the coin is unbiased.

Answer ( [Please click here to Add Answer](#) )

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Write down the names of two types of experimental designs.

Answer ( [Please click here to Add Answer](#) )

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What are the mean and variance of binomial distribution?

Answer ( [Please click here to Add Answer](#) )

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Find the probability of drawing a white ball from a bag containing 4 red, 8 black and 3 white balls.

Answer ( [Please click here to Add Answer](#) )

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Write down the properties of sampling distribution of proportion  $\hat{p}$ , when sampling is performed *without* replacement.

Answer ( [Please click here to Add Answer](#) )

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If  $X = 255$ ,  $n = 500$ ,  $p_0 = 0.60$  then find the z-test statistic for proportion.

Answer ( [Please click here to Add Answer](#) )

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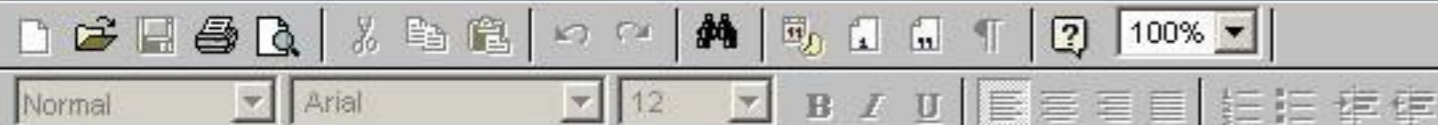
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What is the impact of degrees of freedom on chi- square distribution?

Answer ( [Please click here to Add Answer](#) )

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Find quartile deviation for the data given below:  
18, 53, 45, 28, 39, 29, 23, 40 and 21

Answer ( [Please click here to Add Answer](#) )

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A population consists of  $N=5$  values 1, 2, 3, 5, 6. A sample size of  $n=3$  is selected from the population without replacement, calculate sampling distribution of sample proportions for even numbers.

Answer ( [Please click here to Add Answer](#) )

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Write down the testing procedure in case of goodness of fit test.

Answer ( [Please click here to Add Answer](#) )

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If we have  $n=634$  and  $\hat{p} = 0.459$ , where  $Z_{\frac{0.01}{2}} = 2.58$ , then find the 99% confidence interval for population proportion.

Answer ( Please [click here](#) to Add Answer )

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