The process of using sample statistics to draw conclusions about true population parameters is called | statistical inference

Which of the following is a continuous quantitative variable? | The amount of milk produced by a cow in one 24-hour period

A T.V. shows executives raised the fee for commercials following a report that the show received a No.1 rating in a survey of viewers. What type of the description is? | Observation study

A bag of colored candies contains 20 red, 25 yellow, 15 blue and 20 orange candies. An experiment consists of randomly choosing one candy from the bag and recording its color. What is the sample space for this experiment? | {red, yellow, blue, orange}

Sixty-five percent of men consider themselves knowledgeable football fans. If 15 men are randomly selected, find the probability that exactly five of them will consider themselves knowledgeable fans. | 0.0096

A family is selected at random. Find the probability that the size of the family is more than 4. Round your result to three decimal places. | 0.169

The following table shows the political affiliation of voters in one city and their positions on stronger gun control laws. What is the probability that a Democrat opposes stronger gun control laws? | 0.314

Mr. m figures that there is a 65% chance that his university will set up a branch office in Lao Cai. If it does, he is 90% certain that she will be made director of this new branch. What is the probability that m will be a Lao Cai branch office director? | 0.585

Assume that P(C) = 0.5 and P(D) = 0.3. If C and D are independent, find P(C and D). | 0.15

It was found that 60% of the workers were white, 30% were black and 10% are other races. Given that a worker was white, the probability that the worker had claimed bias was 30%. Given that a worker was black, the probability that the worker had claimed bias was 40%. Given that a worker was other race, the probability that the worker had claimed bias was 0% | 0.4

The on-line access computer service industry is growing at an extraordinary rate. Current estimates suggest that 10% of people with home-based computers have access to on-line services. Suppose that 8 people with home-based computers were randomly and independently sampled. What is the probability that at least 1 of those sampled have access to on-line services at home? | 6.30

The number of weeds that remain living after a specific chemical has been applied averages 1.21 per square yard and follows a Poisson distribution. Based on this, what is the probability that a 1 square yard section will contain less than 5 weeds? | 0.9920

Suppose that X is a continuous random variable whose probability density function is given by f(x)=C(4x-2x^2),0<x<2 and f(x)=0 for other values of x. What is the value of C? | 0.375

Suppose X is a uniform random variable over the interval [40, 50]. Find the probability that a randomly selected observation exceeds 43. | 0.7

A bank's loan officer rates applicants for credit. The ratings are normally distributed with a mean of 350 and a standard deviation of 50. If an applicant is randomly selected, find the probability of a rating that is between 310 and 295. | 0.0762

If X is a normal random variable with = 50 and s = 6, then the probability that X is not between 44 and 56 is | 0.3174.

Assume that X is normally distributed with a mean of 23 and a standard deviation of 5. Find the value of c if P(X > c) = 0.0592. | 30.81

Suppose that the random variable X has an exponential distribution with ? = 1.5. Find the mean and standard deviation of X. | Mean = 0.67; Standard deviation = 0.67

A nurse measured the blood pressure of each person who visited her clinic. Following is a relative-frequence histogram for the systolic blood pressure readings for those people aged between 25 and 40. The blood pressure reading were given to the nearest whole number. Approximately what percentage of the people aged 25-40 had a systolic blood pressure reading between 110 and 119 inclusive? | 35%

A random sample of 42 students has a mean annual earnings of $1200 and a population standard deviation of $230. Construct a 95% confidence interval for the population mean, . | ($1130, $1270)

Construct a 95% confidence interval for the population mean, . Assume the population has a normal distribution. A sample of 28 randomly selected students has a mean test score of 82.5 with a standard deviation of 9.2. | (78.93, 86.07)

The waiting times (in minutes) of customers at the TienPhong Bank, where customers enter a single waiting line that feeds three teller windows, are normally distributed. A random sample of 6 has mean of 7.07 and standard deviation of 0.53.Construct a 94% upper confidence bound for the population standard deviation | 1.06

A random sample of 60 suspension helmets used by motorcycle riders and automobile race-car drivers was subjected to an impact test, and on 15 of these helmets some damage was observed. Find a 95% two-sided confidence interval on the true proportion of helmets of this type that would show damage from this test. | (0.14, 0.36)

The Hilbert Drug Store owner plans to survey a random sample of his customers with the objective of estimating the mean dollars spent on pharmaceutical products during the past three months. He has assumed that the population standard deviation is known to be $14.50. Given this information, what would be the required sample size if we want the total width of the two-side confidence interval on mean to be $4 at 95 percent confidence? | 202

A regional hardware chain is interested in estimating the proportion of their customers who own their own homes. There is some evidence to suggest that the proportion might be around 0.825. Given this, what sample size is required if they wish a 94 percent confidence level with a error of 0.025? | About 817

The owner of a football team claims that the average attendance at games is over 79,000, and he is therefore justified in moving the team to a city with a larger stadium. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: , the average attendance at games, is equal to 79,000 && H1: , the average attendance at games, is greater than 79,000

You wish to test the claim that > 6 at a level of significance of a = 0.05. Let sample statistics be n = 60, s = 1.4 | 1.66

A telephone company claims that 25% of its customers have at least two telephone lines. The company selects a random sample of 500 customers and finds that 108 have two or more telephone lines. At \alpha = 0.05, compute the value of the test statistic to test the company's claim. | -1.76

A manufacturing company is interested in predicting the number of defects that will be produced each hour on the assembly line. The managers believe that there is a relationship between the defect rate and the production rate per hour. The managers believe that they can use production rate to predict the number of defects. The following data were collected for 10 randomly selected hours. | y = 5.67 + .048x.

A recent study of 60 shoppers showed that the correlation between the time spent in the store and the dollars spent was 0.235. Using a significance level equal to 0.01, the critical value for the test to determine whether the true population correlation coefficient is zero is: | 2.66

binomial distribution | P=nCk\*p^k\*(1-p)^(n-k)

poisson distribution | Mean^k/k!\*e^mean

uniform distribution | f(x)=(x-a)/(b-a)

normally distributed | (f(x,E,V)=1/(X\*sqrt(2pi))\*e^(-(x-V)^2/2V^2)

standard normal distribution | f(x)=1/(X\*sqrt(2pi))\*e^(-x^2/2)

exponential distribution | f(x)=1-e^(-lada\*x)......V=lada

An employee at the local ice cream parlor asks three customers if they like chocolate ice cream. What is the population? | all custormers

The probability that a tennis set will go to a tie-breaker is 15%. What is the probability that two of three sets will go to tie-breakers? | 0.057

Find the probability that in 20 tosses of a fair six-sided die, a five will be obtained at least 5 times. | 0.1223

A machine is set to pump cleanser into a process at the rate of 10 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 9.25 to 12.25 gallons per minute. Find the probability that between 10.5 gallons and 11.15 gallons are pumped during a randomly selected minute. | 0.217

A new phone system was installed last year to help reduce the expense of personal calls that were being made by employees. Before the new system was installed, the amount being spent on personal calls follows a normal distribution with an average of $705 per month and a standard deviation of $48 per month. Refer to such expenses as PCE's (personal call expenses). Find the probability that a randomly selected month had a PCE that falls below $650. | 0.1259

Find the value of the linear correlation coefficient r. | 0.58

What is the sample correlation coefficient between X and Y? | -0.93

geometric distribution | p\*(1-p)^(k-1)

Which of the following is a discrete quantitative variable? | The number of cracks exceeding one-half inch in 10 miles of an interstate highway.

Jared was working on a project to look at global warming and accessed an Internet site where he captured average global surface temperatures from 1866. Which of the four methods of data collection was he using? | Retrospective study

According to a survey of American households, the probability that the residents own 3 cars if annual household income is over $25,500 is 63%. Of the households surveyed, 62% had incomes over $25,500 and 44% had 3 cars. The probability that annual household income is over $25,500 if the residents of a household own 3 cars is: | 0.89

Suppose that X has a discrete uniform distribution on the integers 0 through 5. Determine the mean of the random variable Y = 4X | 10

A supermarket manager has determined that the amount of time customers spend in the supermarket is approximately normally distributed with a mean of 51 minutes and a standard deviation of 6.5 minutes. Find the number of minutes, m, for which the probability that a customer spends less than m minutes in the supermarket is 0.20. | 45.5

The time for a worker to assemble a component is normally distributed with mean 15 minutes and variance 4. Denote the mean assembly times of 16 day-shift workers and 9 night-shift workers by $$\overline{X}$$ and $$\overline{Y}$$, respectively. Assume that the assembly times of the workers are mutually independent. The distribution of $$\overline{X} $$- $$\overline{Y}$$ is | normal with mean 0 and standard deviation 5/6.

Find the standard deviation for the given sample data: 2 6 2 2 1 4 4 2 4 2 3 8 4 2 2 7 7 2 3 11 | 2.6

Survey responses of “ good, better, best”. which type of data is? | Ordinal

Find the mean for the binomial distribution which has the stated values of n and p. Round answer to the nearest tenth. n = 20; p = 3/5 | 12.0

Assume that X has a normal distribution with the mean is μ = 15.2 and the standard deviation is σ = 0.9. Find the probability that X is greater than 16.1. | 0.1587

The manufacturer of a refrigerator system for beer kegs produces refrigerators that are supposed to maintain a true mean temperature, μ, of 45°F, ideal for a certain type of German pilsner. The owner of the brewery does not agree with the refrigerator manufacturer, and claims he can prove that the true mean temperature is incorrect. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is to reject the null hypothesis, state the conclusion in nontechnical terms. | There is sufficient evidence to support the claim that the mean temperature is different from 45°F

A bag of colored candies contains 20 red, 25 yellow, and 35 orange candies. An experiment consists of randomly choosing one candy from the bag and recording its color. What is the sample space for this experiment? | {red, yellow, orange}

The probability is 2% that an electrical connector that is kept dry fails during the warranty period of a portable computer. If the connector is ever wet, the probability of a failure during the warranty period is 10%. If 80% of the connectors are kept dry and 20% are wet, what proportion of connectors fail during the warranty period? | 0.036

The amount of pyridoxine (in grams) per multiple vitamin is normally distributed with $$\mu= 110$$ grams and $$\sigma = 25$$ grams. A sample of vitamins is to be selected. What is the probability that the sample mean will be less than 100 grams? Let $$P(Z<-2)=0.023;P(Z<-0.4)=0.421;P(Z<0.07)=0.529;P(Z<0.75)=0.673$$. | 0.023

A card game is played in which the player wins if a face card is drawn (king, queen, jack) from a deck of 52 cards. If the player plays 10 times, what is the expected number of wins for the player? | 2.31

Researchers are concerned that the weight of the average American school child is increasing implying, among other things, that children’s clothing should be manufactured and marketed in larger sizes. If $$X$$ is the weight of school children sampled in a nationwide study, then $$X$$ is an example of | a continuous random variable.

In a recent survey, 80% of the community favored building a police substation in their neighborhood. If 15 citizens are chosen, what is the standard deviation of the number favoring the substation? | 1.55

Find the critical value or values of x2 based on the given information. H1: σ < 0.629 n = 19 α = 0.025 | 8.231

A company has 2 machines that produce widgets. An older machine produces 23% defective widgets, while the new machine produces only 8% defective widgets. In addition, the new machine produces 3 times as many widgets as the older machine does. What is the probability that a randomly chosen widget produced by the company is defective? | 0.1175

Find the origin data from the sterm-and-leaf plot | a.

The grade point averages for 10 randomly selected students are listed below. Construct a 90% confidence interval for the population standard deviation, $$\sigma.$$ Assume the data are normally distributed. 2.0 3.2 1.8 2.9 0.9 4.0 3.3 2.9 3.6 0.8 | (0.81, 1.83)

For large numbers of degrees of freedom, the critical χ2 values can be approximated as follows: χ2 = (z + )2, where k is the number of degrees of freedom and z is the critical value. To find the lower critical value, the negative z-value is used, to find the upper critical value, the positive z-value is used. Use this approximation to estimate the critical value of χ2 in a right-tailed hypothesis test with n =125 and α = 0.01. | χ2 ≈ 162.833

Which statement is true for the scores of 1, 2, 3, 4, 5, 5, 7, 8, 9, and 10? | The mean is greater than the median.

Parking at a large university has become a very big problem. University administrators are interested in determining the average parking time (e.g. the time it takes a student to find a parking spot) of its students. An administrator inconspicuously followed 130 students and carefully recorded their parking times. Identify the sample of interest to the university administration. | parking times of the 130 students

The probability that a radish seed will germinate is 0.7. A gardener plants seeds in batches of 11. Find the standard deviation for the random variable X, the number of seeds germinating in each batch. | 1.52

The standard IQ test has a mean of 96 and a standard deviation of 14. We want to be 90% certain that we are within 4 IQ points of the true mean. Determine the required sample size. | 34

An archer is able to hit the bull's-eye 55% of the time. If she shoots 8 arrows, what is the probability that she gets exactly 4 bull's-eyes? Assume each shot is independent of the others. | 0.2627

Let Z is a standard normal variable, find P(-0.73 < Z < 2.27). | 0.7557

The following table shows the political affiliation of voters in one city and their positions on stronger gun control laws. Favor Oppose Republican 0.09 0.26 Democrat 0.22 0.2 Other 0.11 0.12 What is the probability that a voter who favors stronger gun control laws is a Republican? | 0.214

Determine whether the hypothesis test involves a sampling distribution of means that is a normal distribution, Student t distribution, or neither. Claim: μ = 959. Sample data: n = 25,$$\overline{x} = 951,$$ s = 25. The sample data appear to come from a normally distributed population with σ = 28. | Normal

Suppose X is a uniform random variable over the interval [20, 90]. Find the probability that a randomly selected observation is between 23 and 85. | 0.89

Find the variance for the given probability distribution. x 0 1 2 3 4 P(x) 0.17 0.28 0.05 0.15 0.35 | 2.46

A machine is set to pump cleanser into a process at the rate of 5 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 4.5 to 7.5 gallons per minute. Find the probability that between 5.0 gallons and 6.0 gallons are pumped during a randomly selected minute. | 0.33

Construct the relative frequency distribution that corresponds to given frequency distribution | b.

A new phone system was installed last year to help reduce the expense of personal calls that were being made by employees. Before the new system was installed, the amount being spent on personal calls follows a normal distribution with an average of $700 per month and a standard deviation of $50 per month. Refer to such expenses as PCE's (personal call expenses). Find the probability that a randomly selected month had a PCE that falls below $550. | 0.0013

Find the probability that in 200 tosses of a fair six-sided die, a five will be obtained at least 40 times. | 0.1210

The probability that a student at a certain college is male is 0.45. The probability that a student at that college has a job off campus is 0.33. The probability that a student at the college is male and has a job off campus is 0.15. If a student is chosen at random from the college, what is the probability that the student is male or has an off campus job? | 0.63

Find the critical value or values of $$\chi^2$$ based on the given information. H1: σ < 0.14 n = 23 α = 0.10 | 14.042

The probabilities that a customer entering a particular bookstore buys 0, 1, 2, 3, 4, or 5 books are 0.30, 0.20, 0.20, 0.15, 0.10, and 0.05 respectively. For the probability distribution above, find the variance. (Note: please give the answer as a real number accurate to2 decimal places after the decimal point.) | 0.095089

A psychologist claims that more than 75 percent of the population suffers from professional problems due to extreme shyness. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is failure to reject the null hypothesis, state the conclusion in nontechnical terms. | There is not sufficient evidence to support the claim that the true proportion is greater than 75 percent.

An experiment consists of randomly choosing a number between 1 and 10. Let E be the event that the number chosen is even. List the sample points in | {2, 4, 6, 8, 10}

When conducting a t test for the correlation coefficient in a study with 16 individuals, the degrees of freedom will be | 14.

Suppose that $$X$$ is a negative binomial random variable with $$p = 0.2$$ and $$r = 4$$. Determine $$P(X=20)$$. | 0.0436

Many people think that a national lobby's successful fight against gun control legislation is reflecting the will of a minority of Americans. A previous random sample of 4000 citizens yielded 2250 who are in favor of gun control legislation. How many citizens would need to be sampled if a 95% confidence interval was desired to estimate the true proportion to within 5%? | 379

Let X represent the amount of time it takes a student to park in the library parking lot at the university. If we know that the distribution of parking times can be modeled using an exponential distribution with a mean of 4 minutes, find the probability that it will take a randomly selected student between 2 and 12 minutes to park in the library lot. | 0.556744

A local bank needs information concerning the checking account balances of its customers. A random sample of 15 accounts was checked. The mean balance was $686.75 with a standard deviation of $256.20. Find a 98% confidence interval for the true mean. Assume that the account balances are normally distributed. | ($513.17, $860.33)

A basketball player has made 70% of his foul shots during the season. If he shoots 3 foul shots in tonight's game, what is the probability that he makes all of the shots? | 0.343

Let X be a uniform random variable over the interval [0.1, 5] . What is the probability that the random variable X has a value less than 2.1? | 0.6897

When considering area under the standard normal curve, decide whether the area to the left ofz =0.2is bigger than, smaller than, or equal to the area to the right ofz = -0.2 | equal to

A machine is set to pump cleanser into a process at the rate of 10 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 9.5 to 11.5 gallons per minute. What is the probability that at the time the machine is checked it is pumping more than 10.5 gallons per minute? | 0.50

Find the mode(s) for the given dample data 98, 25, 98, 13, 25, 29, 56, 98 | 98

If you were constructing a 99% confidence interval of the normal population mean based on a sample of $$n = 25$$ where the standard deviation of the sample $$s = 0.05$$. What is the critical value? Let $$t\_{0.005,24}=2.7969;t\_{0.01,24}=2.4922;z\_{0.01}=2.33; z\_{0.05}=2.58$$. | 2.7969

One year, professional sports players salaries averaged $1.5 million with a standard deviation of $0.7 million. Suppose a sample of 100 major league players was taken. Find the approximate probability that the average salary of the 100 players exceeded $1.1 million. | approximately 1

A random number generator is set top generate integer random numbers between 1 and 10 inclusive following a uniform distribution. What is the probability of the random number generator generating a 7? | 1/10

The probability is 0.7 that a person shopping at a certain store will spend less than $20. For random samples of 28 customers, find the mean number of shoppers who spend less than $20. | 19.6

According to a college survey, 22% of all students work full time. Find the standard deviation for the random variable X, the number of students who work full time in samples of size 16. | 1.66

Construct the cumulative frequency distribution that coressponds to the given frequency distribution | d.

A multiple choice test has 10 questions each of which has 4 possible answers, only one of which is correct. If Judy, who forgot to study for the test, guesses on all questions, what is the probability that she will answer exactly 3 questions correctly? | 0.2503

A normal distribution has mean μ = 60 and standard deviation = 6, find the area underthe curve to the right of 64. | 0.2525

In a sample of 10 randomly selected women, it was found that their mean height was 63.4 inches. From previous studies, it is assumed that the standard deviation, $$\sigma,$$ is 2.4. Construct the 95% confidence interval for the population mean. | (61.9, 64.9)

The collection and summarization of the socioeconomic and physical characteristics of the employees of a particular firm is an example of | descriptive statistics.

A nurse at a local hospital is interested in estimating the birth weight of infants. How large a sample must she select if she desires to be 90% confident that the true mean is within 4 ounces of the sample mean? The standard deviation of the birth weights is known to be 6 ounces. | 7

Police estimate that 25% of drivers drive without their seat belts. If they stop 6 drivers at random, find the probability that all of them are wearing their seat belts. | 0.178

LetZ is a standard normal variable, find the the probability that Z lies between 0 and 3.01. | 0.4987

A cereal company claims that the mean weight of the cereal in its packets is at least 14 oz. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: μ = 14 H1: μ < 14

A business venture can result in the following outcomes (with their corresponding chance of occurring in parentheses) Highly Successful (10%), Successful (25%), Break Even (25%), Disappointing (20%), and Highly Disappointing (?). If these are the only outcomes possible for the business venture, what is the chance that the business venture will be considered Highly Disappointing? | 20%

A researcher claims that 62% of voters favor gun control. Assume that a hypothesis test of the given claim will be conducted. Identify the type II error for the test. | gun control is 62% when it is actually different than 62%.

A new phone system was installed last year to help reduce the expense of personal calls that were being made by employees. Before the new system was installed, the amount being spent on personal calls followed a normal distribution with an average of $900 per month and a standard deviation of $50 per month. Refer to such expenses as PCE's (personal call expenses). Using the distribution above, what is the probability that a randomly selected month had a PCE of between $775.00 and $990.00? | .9579

For a standard normal distribution, find the percentage of data that are more than 1 standard deviation away from the mean. | 31.74%

In a random sample of 60 computers, the mean repair cost was $150 with a population standard deviation of $36. Construct a 99% confidence interval for the population mean. | ($138, $162)

Let $$\overline{X}$$ denote the sample mean of a random sample of size n1 = 16 taken from a normal distribution $$N(\mu, 36),$$ and let $$\overline{Y}$$ denote the sample mean of a random sample of size n2 = 25 taken from a different normal distribution $$N(\mu, 9).$$ Compute $$P(\overline{X} - \overline{Y}>5).$$ | 0.001

Construct a 99% confidence interval for the population mean, μ. Assume the population has a normal distribution. A group of 19 randomly selected students has a mean age of 22.4 years with a standard deviation of 3.8 years. | (19.9, 24.9)

The claim is that the proportion of drowning deaths of children attributable to beaches is more than 0.25, and the sample statistics include n= 647 drowning deaths of children with 30% of them attributable to beaches. Find the value of the test statistic z using $$z=\frac{\overline{p}-p\_0}{\sqrt{\frac{p\_0(1-p\_0)}{n}}}$$. | 2.94

The systolic blood pressure of 18-year-old women is normally distributed with a mean of 120 mmHg and a standard deviation of 12 mmHg. What percentage of 18-year-old women have a systolic blood pressure that lies within 3 standard deviations of the mean? | 99.7%

In one region, the September energy consumption levels for single-family homes are normally distributed with a mean of 1050 kWh and a standard deviation of 218 kWh. For a randomly selected home, find the probability that the September energy consumption level is between 1100 kWh and 1225 kWh. | 0.1971

A confidence interval was used to estimate the proportion of statistics students that are female. A random sample of 72 statistics students generated the following confidence interval: Using the information above, what size sample would be necessary if we wanted to estimate the true proportion to within 2% using 99% reliability? | 4118

The principal of a middle school claims that test scores of the seventh-graders at his school vary less than the test scores of the seventh-graders at a neighboring school, which have variation described by σ = 14.7. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is to reject the null hypothesis, state the conclusion in nontechnical terms. | There is sufficient evidence to support the claim that the standard deviation is less than 14.7.

Suppose x is a uniform random variable over the interval [40, 50]. Find the probability that a randomly selected observation exceeds 43. | 0.7

The mean replacement time for a random sample of 12 microwave ovens is 8.6 years with a standard deviation of 2.7 years. Construct the 98% confidence interval for the population variance, $$\sigma^2.$$ Assume the data are normally distributed | (3.2, 26.3)

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 12 ounces and a standard deviation of 4 ounces. Find the number of ounces above which 80% of the dispensed sodas will fall. | 8.6

Carter Motor Company claims that its new sedan, the Libra, will average better than 30 miles per gallon in the city. Use μ, the true average mileage of the Libra. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: μ = 30 H1: μ > 30

Which of the following is not true about the standard normal distribution? | The area under the standard normal curve to the left of z = 0 is negative.

It has been found that 40% of the employees who complete a sequence of executive seminars go on to become vice presidents. Assume that 10 graduates of the program are randomly selected, find the probability that at least two become vice presidents. (Note: please give the answer as a real number accurate to4 decimal places after the decimal point.) | 0.04

The volumes of soda in quart soda bottles are normally distributed with a mean of 32.3 oz and a standard deviation of 1.2 oz. What is the probability that the volume of soda in a randomly selected bottle will be less than 32 oz? | 0.4013

Both Fred and Ed have a bag of candy containing a lemon drop, a cherry drop, and a lollipop. Each takes out a piece and eats it. What are the possible pairs of candies eaten? Create the sample space of possible outcomes. | LD-LD CD-LD LP-LP LD-CD CD-CD LD-LP LP-CD

Using Excel to find three quartiles for the given data below: 1, 3, 6, 10, 15, 21, 28, 36. | 5.25, 12.5, 22.75

If the probability of a newborn child being female is 0.5, find the probability that in 100 births, 55 or more will be female. | 0.1841

Assume that a procedure yields a binomial distribution with a trial repeated n times. Use the binomial probability formula to find the probability of x successes given the probability p of success on a single trial. n =12, x = 5, p = 0.25 | 0.103

A random sample of 10 parking meters in a beach community showed the following incomes for a day. Assume the incomes are normally distributed. $3.60 $4.50 $2.80 $6.30 $2.60 $5.20 $6.75 $4.25 $8.00 $3.00 Find the 95% confidence interval for the true mean. | ($3.39, $6.01)

Suppose a 95% confidence interval for μ turns out to be (1000, 2100). Give a definition of what it means to be "95% confident" in an inference. | In repeated sampling, 95% of the intervals constructed would contain the population mean.

For the sample below, find the number of observations that are within 1.5 standard deviations of the mean. 2, 3, 5, 5, 6, 3, 6, 5, 6, 9, 2, 5, 3, 5, 6, 3, 5, 6, 6, 9. | 16

Use the given information to find the P-value. The test statistic in a right-tailed test is z = 1.43. | 0.0764

On a multiple choice test with 16 questions, each question has four possible answers, one of which is correct. For students who guess at all answers, find the standard deviation for the random variable X, the number of correct answers. | 1.732

The grade point averages for 10 randomly selected students in a statistics class with 125 students are listed below. 2.0 3.2 1.8 2.9 0.9 4.0 3.3 2.9 3.6 0.8 What is the effect on the width of the confidence interval if the sample size is increased to 20? | The width decreases.

A percentage distribution is given below for the size of families in one U.S. city. Size Percentage 2 42.8 3 21.1 4 19.2 5 11.6 6 3.3 7+ 2.0 A family is selected at random. Find the probability that the size of the family is 4 or more. Round your result to three decimal places. | 0.361

Which of the following is true about the sampling distribution of the sample mean? | The mean of the sampling distribution is always μ.

Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A random sample of 16 fluorescent light bulbs has a mean life of 645 hours with a standard deviation of 31 hours. | (628.5, 661.5)

Survey responses of nationalities of survey respondents. which type of data is? | Nomial

For a standard normal distribution, find the percentage of data that are between 3 standard deviations below the mean and 1 standard deviation above the mean. | 84.00%

Assume that a procedure yields a binomial distribution with a trial repeated n times. Use the binomial probability formula to find the probability of x successes given the probability p of success on a single trial. n = 4, x = 3, p = 1/6 | 0.0154

Use the given information to find the P-value. The test statistic in a left-tailed test is z = -1.83. | 0.0336

Assume that z scores are normally distributed with a mean of 0 and a standard deviation of 1. If P(Z > c) = 0.1093, find | 1.23

The accompanying table shows the probability distribution for x, the number that shows up when a loaded die is rolled. Find the variance for the probability distribution. x 1 2 3 4 5 6 P(x) 0.16 0.19 0.22 0.21 0.12 0.10 | 2.36

The owner of a football team claims that the average attendance at games is over 67,800, and he is therefore justified in moving the team to a city with a larger stadium. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: μ, the average attendance at games, is equal to 67,800 H1: μ, the average attendance at games, is greater than 67,800

The manufacturer of a refrigerator system for beer kegs produces refrigerators that are supposed to maintain a true mean temperature, μ, of 50°F, ideal for a certain type of German pilsner. The owner of the brewery does not agree with the refrigerator manufacturer, and claims he can prove that the true mean temperature is incorrect. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the mean temperature equals 50°F when it really does equal 50°F.

A campus program evenly enrolls undergraduate and graduate students. If a random sample of 4 students is selected from the program to be interviewed about the introduction of a new fast food outlet on the ground floor of the campus building, what is the probability that all 4 students selected are undergraduate students? | 0.0625

Flip a coin twice, create the sample space of possible outcomes. | HH HT TH TT

The number of power outages at a nuclear power plant has a Poisson distribution with a mean of 6 outages per year. The probability that there will be exactly 3 power outages in a year is | 0.0892

If two balanced die are rolled, the possible outcomes can be represented as follows. (1, 1) (2, 1) (3, 1) (4, 1) (5, 1) (6, 1) (1, 2) (2, 2) (3, 2) (4, 2) (5, 2) (6, 2) (1, 3) (2, 3) (3, 3) (4, 3) (5, 3) (6, 3) (1, 4) (2, 4) (3, 4) (4, 4) (5, 4) (6, 4) (1, 5) (2, 5) (3, 5) (4, 5) (5, 5) (6, 5) (1, 6) (2, 6) (3, 6) (4, 6) (5, 6) (6, 6) Determine the probability that the sum of the dice is 7. | 1/6

A company has 2 machines that produce widgets. An older machine produces 23% defective widgets, while the new machine produces only 8% defective widgets. In addition, the new machine produces 3 times as many widgets as the older machine does. Given that a widget was produced by the new machine, what is the probability it is not defective? | 0.92

At one college, GPAs are normally distributed with a mean of 2.6 and a standard deviation of 0.4. What percentage of students at the college have a GPA between 2.2 and 3? | 68%

When is the correlation coefficient zero? | when there is no linear correlation

For sample sizes greater than 40, the sampling distribution of the mean will be approximately normally distributed | regardless of the shape of the population.

Find the critical value or values of $$\chi^2$$ based on the given information. H1: σ > 26.1 n = 9 α = 0.01 | 20.090

To determine the difference , if any, between two brands of radial tires, 12 tires of each brand are tested. Assume that the lifetimes of both brands of tires come from the same normal distribution $$N(\mu, 3300^2).$$ Compute $$P(\overline{X}-\overline{Y} <-2500).$$ | 0.0314

Find the mean of thefollowing probability distribution. x 0 1 2 3 4 P(x) 0.19 0.37 0.16 0.26 0.02 | 1.55

When considering area under the standard normal curve, decide whether the area to the right of z = 2 is bigger than, smaller than, or equal to the area to the right of z = 2.5. | bigger than

Find the percentile for the data point. data set: 3 11 8 6 3 3 11 6 3 11 2 11 15 4 9 3 12 8 6 11 data point: 6 | 35

Find the critical value or values of x2 based on the given information. H0: σ = 8.0 n = 10 α = 0.01 | 1.735, 23.589

Construct a 90% confidence interval for the population mean, μ. Assume the population has a normal distribution. In a recent study of 22 eighth graders, the mean number of hours per week that they watched television was 19.6 with a standard deviation of 5.8 hours. | (17.47, 21.73)

Let X be a random variable has the following uniform density function f(x) = 0.1 when 0< x < 10. What is the probability that the random variable X has a value greater than 5.3? | 0.47

If you were constructing a 99% confidence interval of the population mean based on a sample of n=25 where the standard deviation of the sample s = 0.05, the critical value of t will be | 2.7969.

Suppose that P(A | B) = 0.3 and P(B) = 0.4. Determine P(A' and B). | 0.28

The diameter of ball bearings produced in a manufacturing process can be explained using a uniform distribution over the interval 4.5 to 6.5 millimeters. What is the probability that a randomly selected ball bearing has a diameter greater than 5.2 millimeters? | 0.65

Suppose that $$X$$ has the probability density function $$f(x)=1.5x^2$$ for $$-1 Chọn một câu trả lời | 0.125

Two white mice mate. The male has both a white and a black fur-color gene. The female has only white fur-color genes. The fur color of the offspring depends on the pairs of fur-color genes that they receive. Assume that neither the white nor the black gene dominates. List the possible outcomes. W = white and B = black Create the sample space of possible outcomes. | WW, BW

The diameters of ball bearings produced in a manufacturing process can be described using a uniform distribution over the interval 8.5 to 10.5 millimeters. What is the probability that a randomly selected ball bearing has a diameter greater than 9.2 millimeters? | 0.65

A cereal company claims that the mean weight of the cereal in its packets is at least 14 oz. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is to reject the null hypothesis, state the conclusion in nontechnical terms. | There is sufficient evidence to warrant rejection of the claim that the mean weight is at least

Flip a coin three times, create the sample space of possible outcomes. | HHH HHT HTH HTT THH THT TTH TTT

Find the standard deviation for the given probability distribution. x 0 1 2 3 4 P(x) 0.37 0.05 0.13 0.25 0.20 | 1.60

The amount of corn chips dispensed into a 20-ounce bag by the dispensing machine has been identified at possessing a normal distribution with a mean of 20.5 ounces and a standard deviation of 0.2-ounce. Suppose 100 bags of chips were randomly selected from this dispensing machine. Find the probability that the sample mean weight of these 100 bags exceeded 20.6 ounces. | approximately 0

The length of time it takes college students to find a parking spot in the library parking lot follows a normal distribution with a mean of 4.0 minutes and a standard deviation of 1 minute. Find the probability that a randomly selected college student will take between 2.5 and 5.0 minutes to find a parking spot in the library lot. | 0.7745

A store manager kept track of the number of newspapers sold each week over a seven-week period. The results are shown below: 95, 38, 221, 122, 258, 237, 233. Find the median number of newspapers sold | 221

A psychologist claims that more than 3 percent of the population suffers from professional problems due to extreme shyness. Assume that a hypothesis test of the given claim will be conducted. Identify the type II error for the test. | most 3 percent when it is actually more than 3 percent.

According to police sources a car with a certain protection system will be recovered 87% of the time. Find the probability that 4 of 7 stolen cars will be recovered. | 0.044

If X is a normal random variable with μ = 50 and σ = 6, then the probability that X is not between 44 and 56 is | 0.3174.

Those methods involving the collection, presentation, and characterization of a set of data in order to properly describe the various features of that set of data are called | descriptive statistics.

The following table shows the political affiliation of voters in one city and their positions on stronger gun control laws. Favor Oppose Republican 0.11 0.27 Democrat 0.25 0.16 Other 0.15 0.06 What is the probability that a Democrat opposes stronger gun control laws? | 0.390

The distances traveled (in miles) to 7 different swim meets are given below: 12, 18, 31, 46, 69, 71, 85. Find the median distance traveled. | 46 miles

We have created a 95% confidence interval for $$\mu$$ with the result (10, 15). What decision will we make if we test $$H\_0: \mu =16$$ versus $$H\_1: \mu eq 16$$ at $$\alpha= 0.05$$? | Reject $$H\_0$$ in favor of $$H\_1$$.

A researcher claims that 62% of voters favor gun control.Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p = 0.62 H1: p ≠ 0.62

In a binomial distribution with 10 trials, which of the following is true? | P(x > 7) = P(x ≥ 8)

If a random variable has the normal distribution with μ = 30 and σ = 5, find the probability that it will take on the value between 31 and 35. | 0.262

To determine the difference , if any, between two brands of radial tires, 12 tires of each brand are tested. Assume that the lifetimes of both brands of tires come from the same normal distribution N(m, 33002). The distribution of the difference of the sample mean $$\overline{X}$$ - $$\overline{Y}.$$ | normal with mean 0 and standard deviation 1347.22

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.05 for a two-tailed test. | ±1.96

Assume that z scores are normally distributed with a mean of 0 and a standard deviation of 1. If P(-a < Z < a) = 0.4314, find | 0.57

Suppose X is a uniform random variable over the interval [40, 70]. Find the standard deviation of X. | 8.66

Let X represent the amount of time it takes a student to park in the library parking lot at the university. If we know that the distribution of parking times can be modeled using an exponential distribution with a mean of 4 minutes, find the probability that it will take a randomly selected student more than 10 minutes to park in the library lot. | 0.082085

If two balanced die are rolled, the possible outcomes can be represented as follows. (1, 1) (2, 1) (3, 1) (4, 1) (5, 1) (6, 1) (1, 2) (2, 2) (3, 2) (4, 2) (5, 2) (6, 2) (1, 3) (2, 3) (3, 3) (4, 3) (5, 3) (6, 3) (1, 4) (2, 4) (3, 4) (4, 4) (5, 4) (6, 4) (1, 5) (2, 5) (3, 5) (4, 5) (5, 5) (6, 5) (1, 6) (2, 6) (3, 6) (4, 6) (5, 6) (6, 6) Determine the probability that the sum of the dice is 4 or 12. | 1/9

According to the Center for Disease Control, 41.5% of babies born in the U.S. in 2004 were still being breastfed at 6 months of age. If 4 children who were born in the U.S. in 2004 are randomly selected, what is the probability that none of them were breastfed for at least 6 months? | 0.12

When considering area under the standard normal curve, decide whether the area between z = -1.5 and z = 1.1 is bigger than, smaller than, or equal to the area between z = -1.1 and z = 1.5. | equal to

A polltaker asked graduating college seniors how many times they had given blood in the last year. The results of the survey are given below. The random variable x represents the number of times a person gave blood and P(x) represents the probability of selecting a graduating college who had given blood that percent of the time. What is the standard deviation for the number of times a person gave blood based on this poll? x 0 1 2 3 4 5 6 P(x) 0.30 0.25 0.20 0.12 0.07 0.04 0.02 | 1.54

Let $$X$$ be uniformly distributed over [0, 1]. Calculate $$E[X^3]$$. | 0.25

The lifetimes of light bulbs of a particular type are normally distributed with a mean of 360 hours and a standard deviation of 5 hours. What percentage of the bulbs have lifetimes that lie within 1 standard deviation of the mean? | 68%

The breakdown of workers in a particular state according to their political affiliation and type of job held is shown here. Suppose a worker is selected at random within the state and the worker's political affiliation and type of job are noted. Political Affiliation Given the worker is a Democrat, what is the probability that the worker is in a white collar job. | 0.526

The age distribution of students at a community college is given below. Age (years) Number of students Under 21 409 21-24 404 25-28 276 29-32 155 33-36 97 37-40 63 Over 40 86 A student from the community college is selected at random. Find the probability that the student is 21 years or over. Give your answer as a decimal rounded to three decimal places. | 0.726

The lengths of human pregnancies are normally distributed with a mean of 268 days and a standard deviation of 15 days. What is the probability that a pregnancy lasts at least 300 days? | 0.0166

The probability that a house in an urban area will be burglarized is 2%. If 29 houses are randomly selected, what is the probability that none of the houses will be burglarized? | 0.557

The diameters of pencils produced by a certain machine are normally distributed with a mean of 0.30 inches and a standard deviation of 0.01 inches. What is the probability that the diameter of a randomly selected pencil will be less than 0.285 inches? | 0.0668

Based on the scores 1, 9, 3, 6, 1, 2, 6, 2, 2, and 8, a score of 4 is the | mean.

Compute the critical value $$z\_{\alpha/2}$$ that corresponds to a 94% level of confidence. | 1.88

For two events A and B, P(A) = 0.8, P(B) = 0.2, and P(A and B) = 0.16. It follows that A and B are | independent but not disjoint.

A test consists of 10 true/false questions. To pass the test a student must answer at least 7 questions correctly. If a student guesses on each question, what is the probability that the student will pass the test? | 0.172

Find the mean of the data summarized in the given frequency distribution. Daily Low Temperature (F) Frequency 35-39 1 40-44 3 45-49 5 50-54 11 55-59 7 60-64 7 65-69 1 | 53.4

A machine is set to pump cleanser into a process at the rate of 10 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 9.5 to 13.5 gallons per minute. Find the variance of the distribution. | 1.33

Friskie is having her fifth litter. The prior litters have either been three normal pups or two normal pups and a runt. Assume the probability of either outcome is 50%. Create the sample space of possible outcomes. | NNR NNN

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $25,000 is 80%. Of the households surveyed, 60% had incomes over $25,000 and 70% had 2 cars. The probability that annual household income is over $25,000 if the residents of a household own 2 cars is: | 0.69

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $25,000 is 80%. Of the households surveyed, 60% had incomes over $25,000 and 70% had 2 cars. The probability that the residents of a household do not own 2 cars and have an income over $25,000 a year is: | 0.12

Assume that the heights of men are normally distributed. A random sample of 16 men have a mean height of 67.5 inches and a standard deviation of 3.2 inches. Construct a 99% confidence interval for the population standard deviation, $$\sigma.$$ | (2.2, 5.8)

When considering area under the standard normal curve, decide whether the area between z = 3 andz = -3 is bigger than, smaller than, or equal to the area betweenz =2.7 and z = 2.9. | bigger than

Find the standard deviation for the binomial distribution which has the stated values of n and p. Round your answer to the nearest hundredth. n = 2661; p = 0.63 | 24.91

Survey responses of temperatures of the ocean at various depths. which type of data is? | Interval

Let X be a uniform random variable over the interval [1, 9] . What is the probability that the random variable X has a value less than 6? | 0.400

Find the variance for the given sample data 53 52 75 62 68 58 49 49 | 89.6

At a computer manufacturing company, the actual size of computer chips is normally distributed with a mean of 1 centimeter and a standard deviation of 0.1 centimeter. A random sample of 12 computer chips is taken. What is the standard error for the sample mean? | 0.029

Find z if the normal curve area to the right of z is 0.8997. | -1.2798

The heights of a group of professional basketball players are summarized in the frequency distribution below. Find the mean height. Round your answer to one decimal place. | 76.4

Assume that blood pressure readings are normally distributed with a mean of 124 and a standard deviation of 6.4. If 64 people are randomly selected, find the probability that their mean blood pressure will be less than 126. | 0.9938

The probability of winning a certain lottery is 1/51949. For people who play 560 times, find the standard deviation for the random variable X, the number of wins. | 0.1038

The mean diameter of marbles manufactured at a particular toy factory is 0.850 cm with a standard deviation of 0.010cm. What is the probability of selecting a random sample of 100 marbles that has a mean diameter greater than 0.851 cm? | 0.1587

Suppose that a number of miles that a car can run before its battery wears out is exponentially distributed with an average value of 10000 miles. If a person desires to take a 5000-mile trip, what is the probability that she will be able to complete her trip without having to replace her car battery? | 0.6

The distribution of B.A. degrees conferred by a local college is listed below, by major. Major Frequency Engineering 868 English 2073 Mathematics 2164 Chemistry 318 Physics 856 Liberal Arts 1358 Business 1676 What is the probability that a randomly selected degree is not in Mathematics? | 0.768

Assume that X has a normal distribution with the mean is μ = 15.2 and the standard deviation is σ = 0.9. Find the probability that X is between 14.3 and 16.1. | 0.6826

LetZ is a standard normal variable, find the probability that Z lies between -1.10 and -0.36. | 0.2237

According to the 2003 National Survey on Drug Use and Health, 54.3% of males have never used marijuana. Based on this percentage, what is the expected number of males who have used marijuana for samples of size 100? | 45.7

It has been found that 40% of the employees who complete a sequence of executive seminars go on to become vice presidents. Assume that 10 graduates of the program are randomly selected, find the probability that from two to four become vice presidents. (Note: please give the answer as a real number accurate to4 decimal places after the decimal point.) | 0.034

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 12 ounces and a standard deviation of 4 ounces. Find the probability that more than 16 ounces is dispensed in a cup. | 0.1587

Find the mean for the binomial distribution which has the stated values of n and p. Round answer to the nearest tenth. n = 33; p = 0.2 | 6.6

The weights of the fish in a certain lake are normally distributed with a mean of 15 lb and a standard deviation of 6. If 4 fish are randomly selected, what is the probability that the mean weight will be between 12.6 and 18.6 lb. | 0.6730

The time (in years) until the first critical-part failure for a certain car is exponentially distributed with a mean of 3.4 years. Find the probability that the time until the first critical-part failure is 5 years or more. | 0.229790

At a California college, 22% of students speak Spanish, 5% speak French, and 3% speak both languages. What is the probability that a student chosen at random from the college speaks Spanish but not French? | 0.19

Assume that the heights of women are normally distributed. A random sample of 20 women have a mean height of 62.5 inches and a standard deviation of 2.5 inches. Construct a 98% confidence interval for the population variance, $$\sigma^2.$$ | (3.3, 15.6)

Construct the boxplot for the given data below: 3, 3, 5, 6, 4, 9, 8, 9, 6. | d.

A die is rolled 10 times and the number of times that two shows on the up face is counted. If this experiment is repeated many times, find the mean for the random variable X, the number of twos thrown out of ten tosses. | 1.67

Find the critical value or values of x2 based on the given information. H1: σ ≠ 9.3 n = 28 α = 0.05 | 14.573, 43.194

A population of Australian Koala bears has a mean height of 20 inches and a standard deviation of 4 inches. You plan to choose a sample of 64 bears at random. What is the probability of a sample mean between 20 and 21. | 0.4772

Assume that a researcher randomly selects 14 newborn babies and counts the number of girls selected, X. The probabilities corresponding to the 14 possible values of x are summarized in the given table. Answer the question using the following table. X(girls) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 P(X) 0.000 0.001 0.006 0.022 0.061 0.122 0.183 0.209 0.183 0.122 0.061 0.022 0.006 0.001 0.000 Find the probability of selecting 9 or more girls. | 0.212

The random variableX represents the number of girls in a family of three children. Assuming that boys and girls are equally likely, find the mean and standard deviation for the random variable X. | mean: 1.50; standard deviation: 0.87

The amount of soda a dispensing machine pours into a 12 ounce can of soda follows a normal distribution with a mean of 12.27 ounces and a standard deviation of 0.18 ounce. The cans only hold 12.45 ounces of soda. Every can that has more than 12.45 ounces of soda poured into it causes a spill and the can needs to go through a special cleaning process before it can be sold. What is the probability a randomly selected can will need to go through this process? | 0.1587

An electrical firm manufactures a certain type of light bulb that has a mean light of 1,800 hours and a standard deviation of 200 hours. Find the probability that a random sample of 100 bulbs will have an average life of more than 1,825 hours. | 0.1056

A psychologist claims that more than 6.3 percent of the population suffers from professional problems due to extreme shyness. Use p, the true percentage of the population that suffers from extreme shyness. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p = 6.3% H1: p > 6.3%

A major videocassette rental chain is considering opening a new store in an area that currently does not have any such stores. The chain will open if there is evidence that more than 25% households in the area are equipped with videocassette recorders (VCRs). It conducts a telephone poll of 300 randomly selected households in the area and finds that 96 have VCRs. The value of the test statistic in this problem is approximately equal to | 2.80

Which of the following is a discrete quantitative variable? | The number of employees of an insurance company

Suppose that the probability that a particular brand of light bulb fails before 900 hours of use is 0.2. If you purchase 3 of these bulbs, what is the probability that at least one of them lasts 900 hours or more? | 0.992

Determine whether the given conditions justify testing a claim about a population mean μ. The sample size is n = 49, σ = 12.3, and the original population is not normally distributed. | Yes

Determine whether the hypothesis test involves a sampling distribution of means that is a normal distribution, Student t distribution, or neither. Claim: μ = 78. Sample data: n = 24, $$\overline{x} = 101,$$ s = 15.3. The sample data appear to come from a population with a distribution that is very far from normal, and σ is unknown. | Neither

A supermarket manager has determined that the amount of time customers spend in the supermarket is approximately normally distributed with a mean of 45 minutes and a standard deviation of 6 minutes. Find the number of minutes, m, for which the probability that a customer spends less than m minutes in the supermarket is 0.10. | 37.3

If you flip a coin three times, the possible outcomes are HHH HHT HTH HTT THH THT TTH TTT. What is the probability of getting at least one head? | 7/8

The owner of a football team claims that the average attendance at games is over 60,000, and he is therefore justified in moving the team to a city with a larger stadium. Assume that a hypothesis test of the given claim will be conducted. Identify the type II error for the test. | most 60,000, when it is actually greater than 60,000.

On a 10-question multiple choice test , each question has four possible answers, one of which is correct. For students who guess at all answers, find the mean for the random variable X, the number of correct answers. | 2.5

An economist is interested in studying the incomes of consumers in a particular region. The population standard deviation is known to be $1000. A random sample of 50 individuals resulted in an average income of $15000. What is the width of the 90% confidence interval? | $465.23

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.09 for a right-tailed test. | +1.34

Which of the following statements is false i) If X1, X2,…,Xn is a random sample of size n,the sample standard deviation S is nota statistic. ii) The probability distribution of a statistic is called a sampling distribution. iii) A statistic is any function of the observations in a random sample. iv) The sampling distribution of a statistic does not depend on the distribution of the population. | i) and iv)

An entomologist writes an article in a scientific journal which claims that fewer than 11 in ten thousand male fireflies are unable to produce light due to a genetic mutation. Use the parameter p, the true proportion of fireflies unable to produce light. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p = 0.0011 H1: p < 0.0011

According to a CNN poll taken in February of 2008, 67% of respondents disapproved of the overall job that President Bush was doing. Based on this poll, for samples of size 200, what is the mean number of American adults who disapprove of the overall job that President Bush is doing? | 134

A university dean is interested in determining the proportion of students who receive some sort of financial aid. Rather than examine the records for all students, the dean randomly selects 200 students and finds that 118 of them are receiving financial aid. Use a 95% confidence interval to estimate the true proportion of students on financial aid. | 0.59 ± 0.068

The peak shopping time at home improvement store is between 8-11:00 am on Saturday mornings. Management at the home improvement store randomly selected 150 customers last Saturday morning and decided to observe their shopping habits. They recorded the number of items that a sapmle of the customers purchased as well as the total time the customers spent in the store. Identify the types of variables recorded by the home improvement store. | number of items - discrete; total time - continuous

An airline reports that it has been experiencing a 15% rate of no-shows on advanced reservations. Among 150 advanced reservations, find the probability that there will be fewer than 20 no-shows. | 0.251

The name of each contestant is written on a separate card, the cards are placed in a bag, and three names are picked from the bag. Identify which of these types of sampling is used: Stratified, systematic, cluster, random. | Random

A random sample of 40 students has a mean annual earnings of $3120 and a population standard deviation of $677. Construct the confidence interval for the population mean, μ. Use a 95% confidence level. | ($2910, $3330)

An economist is interested in studying the incomes of consumers in a particular region. The normally population standard deviation is known to be $1000. What total sample size would the economist need to use for a 95% confidence interval if the width of the interval should not be more than $100? Let $$z\_{0.025}=1.96; z\_{0.05}=1.65$$. | n = 1537

The time (in years) until the first critical-part failure for a certain car is exponentially distributed with a mean of 3.4 years. Find the probability that the time until the first critical-part failure is less than 1 year. | 0.254811

A study of the amount of time it take a mechanic to rebuild the transmission for a 1992 Chevrolet Cavalier shows that the mean is 8.4 hours and the standard deviation is 1.8 hours. If 40 mechanics are randomly selected, find the probability that their mean rebuild time exceeds 8.7 hours. | 0.1469

Suppose x is a uniform random variable over [10,90]. Find the probability that a randomly selected observation exceeds 26. | 0.8

A university dean is interested in determining the proportion of students who receive some sort of financial aid. Rather than examine the records for all students, the dean randomly selects 200 students and finds that 118 of them are receiving financial aid. Use a 90\% confidence interval to estimate the true proportion of students who receive financial aid. Let $$z\_{0.1}=1.28;z\_{0.05}=1.65$$. | (0.533; 0.647)

To determine the mean of a binomial distribution, it is necessary to know the number of successes involved in the problem. | False

Which of the following is always true for a normal distribution? | P(2< x ≤ 8) = P(2 ≤ x < 8)

Find the normal-curve area between z = -1.48 and z = 0. | 0.4306

Brandon and Samantha each carry a bag containing a banana, a chocolate bar, and a licorice stick. Simultaneously, they take out a single food item and consume it. The possible pairs of food items that Brandon and Samantha consumed are as follows. chocolate bar - chocolate bar licorice stick - chocolate bar banana - banana chocolate bar - licorice stick licorice stick - licorice stick chocolate bar - banana banana - licorice stick licorice stick - banana banana - chocolate bar Find the probability that at least one chocolate bar was eaten. | 5/9

A study of 1000 randomly selected flights of a major airline showed that 782 of the flights arrived on time. What is the probability of a flight arriving on time? | 391/500

Assume that the weights of quarters are normally distributed with a mean of 5.67 g and a standard deviation 0.070 g. A vending machine will only accept coins weighing between 5.48 g and 5.82 g. What percentage of legal quarters will be rejected? | 1.96%

In a recent survey, 80% of the community favored building a police substation in their neighborhood. If 15 citizens are chosen, what is the mean number favoring the substation? | 12

The tread life of a particular brand of tire is a random variable best described by a normal distribution with a mean of 60,000 miles and a standard deviation of 1900 miles. What is the probability a certain tire of this brand will last between 56,010 miles and 56,580 miles? | 0.0180

According to a 2007 report published by the National Center on Addiction and Substance Abuse at Columbia University, 59% of teens have family dinners five or more times a week, 13% of teens have used marijuana and the proportion of teens who have family dinners 5 or more times a week or use marijuana is 0.64. What is the probability that a teen has family dinners five or more times a week and uses marijuana? Hint. Use the addition rules. | 0.08

A percentage distribution is given below for the size of families in one U.S. city. Size Percentage 2 45.1 3 22.2 4 19.7 5 8.0 6 3.1 7+ 1.9 A family is selected at random. Find the probability that the size of the family is less than 6. Round your result to three decimal places. | 0.950

The principal of a middle school claims that test scores of the seventh-graders at her school vary less than the test scores of seventh-graders at a neighboring school, which have variation described by σ = 14.7. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: σ = 14.7 H1: σ < 14.7

To calculate the probability of obtaining three aces in eight draws of a card with replacement from an ordinary deck, we would use the | binomial distribution.

The outcome of an experiment is the number of resulting heads when a nickel and a dime are flipped simultaneously. What is the sample space for this experiment? | {0, 1, 2}

If we are using the normal approximation to determine the probability of at most 28 successes in a binomial distribution P(x ≤ 28) the normal distribution probability that is used to make the estimate is | P(x ≤ 28.5).

The use of the Poisson distribution requires a value n which indicates a definite number of independent trials. | False

The process of using sample statistics to draw conclusions about true population parameters is called | statistical inference.

In 2006, the percent of the voting-age population that was registered to vote for the 50 states and the District of Columbia had a mean of 65% with a standard deviation of 7.1. Assuming that the distribution is normal, what percentage of states had between 50 and 70 percent of it's voting-age population who were registered to vote? | 0.74

A stock analyst compares the relationship between stock prices and earnings per share to help him select a stock for investment. What type of the description is? | Observation study

According to a college survey, 22% of all students work full time. Find the mean for the random variable X, the number of students who work full time in samples of size 16. | 3.52

The following table contains the probability distribution for X = the number of traffic accidents reported in a day in Hanoi. X 0 1 2 3 4 5 P(X) 0.10 0.20 0.45 0.15 0.05 0.05 The probability of more than 2 accidents is | 0.25

A Type II error is committed when | we don't reject a null hypothesis that is false.

Use the given information to find the P-value. The test statistic in a right-tailed test is z = 0.52. | 0.3015

A company had 80 employees whose salaries are summarized in the frequency distribution below. Find the mean salary. | d.

According to the Center for Disease Control, in 2004, 65.7% of all adults between the ages of 18 and 44 were considered current drinkers. Based on this estimate, if two randomly selected adults between the ages of 18 and 44 are selected, what is the probability that at least one is a current drinker? | 0.88

An article a Florida newspaper reported on the topics that teenagers most want to discuss with their parents. The findings, the results of a poll, showed that 46% would like more discussion about the family's financial situation, 37% would like to talk about school, and 30% would like to talk about religion. These and other percentages were based on a national sampling of 549 teenagers. Estimate the proportion of all teenagers who want more family discussions about school. Use a 99% confidence level. | 0.37 ± .053

Which of the following is not true of statistics? | Statistics is used to answer questions with 100% certainty.

A group of 40 bowlers showed that their average score was 192 with a population standard deviation of 8. Find the 95% confidence interval of the mean score of all bowlers. | (189.5, 194.5)

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 12 ounces and a standard deviation of 4 ounces. Find the probability that between 15 and 18 ounces are dispensed in a cup. | 0.1598

Let X be a uniform random variable over the interval [0, 8] . What is the probability that the random variable X has a value greater than 3? | 0.625

A confidence interval was used to estimate the proportion of statistics students that are female. A random sample of 72 statistics students generated the following 90% confidence interval: (0.438, 0.642). Using the information above, what total size sample would be necessary if we wanted to estimate the true proportion to within 0.08 using 95% confidence? | 150

The area to the right of z = 1.0 is equal to | 0.1587.

Use the given information to find the P-value. The test statistic in a left-tailed test is z = -2.05. | 0.0202

Suppose that11% of people are left handed. If 6 people are selected at random, what is the probability that exactly 2 of them are left handed? | 0.1139

Suppose that the random variable X has an exponential distribution with λ = 1.5. Find the mean and standard deviation of X. | Mean = 0.67; Standard deviation = 0.44

A survey of senior citizens at a doctor's office shows that 52% take blood pressure-lowering medication, 43% take cholesterol-lowering medication, and 5% take both medications. What is the probability that a senior citizen takes either blood pressure-lowering or cholesterol-lowering medication? | 0.90

The diameters of bolts produced by a certain machine are normally distributed with a mean of 0.30 inches and a standard deviation of 0.01 inches. What percentage of bolts will have a diameter greater than 0.32 inches? | 2.28%

Assume that the heights of men are normally distributed. A random sample of 16 men have a mean height of 67.5 inches and a standard deviation of 2.2 inches. Construct a 99% confidence interval for the population standard deviation. Let $$\chi\_{0.005,15}^2=32.8;\chi\_{0.995,15}^2=4.6$$. | (1.5, 4.0)

If Z is a standard normal variable, find the the probability that Z is less than 1.13. | 0.8708

For women aged 18-24, systolic blood pressures ( in mm Hg) are normally distributed with a mean of 114.8 and a standard deviation of 13.1. If 23 women aged 18-24 are randomly selected, find the probability that their mean systolic blood pressures is between 119 and 122. | 0.0577

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $25,000 is 80%. Of the households surveyed, 60% had incomes over $25,000 and 70% had 2 cars. The probability that the residents of a household own 2 cars and have an income over $25,000 a year is: | 0.48

Assume that a procedure yields a binomial distribution with a trial repeated n times. Use the binomial probability formula to find the probability of x successes given the probability p of success on a single trial. n = 64, x = 3, p = 0.04 | 0.221

Private colleges and universities rely on money contributed by individuals and corporations for their operating expenses. Much of this money is put into a fund called an endowment, and the college spends only the interest earned by the fund. A recent survey of 8 private colleges in Vietnam revealed the following endowments (in millions of dollars) 60.2, 47.0, 235.1, 490.0, 122.6, 177.5, 95.4, and 220.0. What value will be used as the point estimate for the mean endowment of all private colleges in Vietnam? | $180.975

The number of 113 calls in Hanoi, has a Poisson distribution with a mean of 10 calls a day. The probability of seven 113 calls in a day is | 0.09

Find the normal-curve area between z = -2 and z = -1. | 0.1359

Assume that z scores are normally distributed with a mean of 0 and a standard deviation of 1. If P(0.2 < Z < a) = 0.2314, find | 0.8805

If a random variable has the normal distribution with μ = 30 and σ = 5, find the probability that it will take on the value between 24 and 28. | 0.2295

A 99% confidence interval estimate can be interpreted to mean that | Both of the above.

In 2006, the General Social Survey asked 4,491 respondents how often they attended religious services. The responses were as follows: Frequency Number of respondents Never 1020 Less than once a year 302 Once a year 571 Several times a year 502 Once a month 308 Two-three times a month 380 Nearly every week 240 Every week 839 More than once a week 329 What is the probability that a randomly selected respondent attended religious services more than once a year? | 0.58

Find z if the normal curve area between 0 and z is 0.4756. | 1.9703

The paired data below consist of the test scores of 6 randomly selected students and the number of hours they studied for the test. Hours 5 10 4 6 10 9 Score 4 8 3 6 9 8 $$ Find the value of the linear correlation coefficient $$r$$. | 0.973

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 3 minutes. Find the waiting time at which only 10% of the customers will continue to hold. | 6.9 minutes

Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 25 randomly selected students has a mean test score of 81.5 with a standard deviation of 10.2. | (77.29, 85.71)

Patients arriving at an outpatient clinic follow an exponential distribution at a rate of 15 patients per hour. What is the probability that a randomly chosen arrival to be less than 15 minutes? | 0.9765

A student randomly selects 10 CDs at a store. The mean is $8.75 with a standard deviation of $1.50. Construct a 95% confidence interval for the population standard deviation, $$\sigma.$$ Assume the data are normally distributed. | ($1.03, $2.74)

If $$n = 10$$ and $$p = 0.70$$, then the standard deviation of the binomial distribution is | 1.45

A telemarketer found that there was a 1% chance of a sale from his phone solicitations. Find the probability of getting 5 or more sales for 1000 telephone calls. | 0.9599

Which of the following cannot be a probability? | 4/3

Find the variance of the given data. Round your answer to one more decimals than the original data. | 3.96

In 2005, the property crime rates (per 100,000 residents) for the 50 states and the District of Columbia had a mean of 3377.2 and a standard deviation of 847.4. Assuming the distribution of property crime rates is normal, what percentage of the states had property crime rates between 2360 and 4055? | 0.67

According to the U.S. census, in 2005 21% of homicide victims were known to be female, 9.7% were known to be under the age of 18 and 2.8% were known to be females under the age of 18. What is the probability that a murder victim was known to be female or under the age of 18 based on these 2005 estimates? | 0.279

The random variableX represents the number of tests that a patient entering a hospital will have along with the corresponding probabilities. Find the mean and standard deviation for the random variable X. x 0 1 2 3 4 P(x) 3/17 5/17 6/17 2/17 1/17 | mean: 1.59; standard deviation: 1.09

Assume that X has a normal distribution with the mean is μ = 15.2 and the standard deviation is σ = 0.9. Find the probability that X is greater than 15.2. | 0.5000

A company has 2 machines that produce widgets. An older machine produces 23% defective widgets, while the new machine produces only 8% defective widgets. In addition, the new machine produces 3 times as many widgets as the older machine does. Given a randomly chosen widget was tested and found to be defective, what is the probability it was produced by the new machine? | 0.511

The systolic blood pressure of 18-year-old women is normally distributed with a mean of 120 mmHg and a standard deviation of 12 mmHg. What percentage of 18-year-old women have a systolic blood pressure between 96 mmHg and 144 mmHg? | 95%

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 2.8 minutes. What is the probability that a randomly selected caller is placed on hold fewer than 7 minutes? | 0.917915

Suppose X is a uniform random variable over [10, 70]. Find the probability that a randomly selected observation is between 13 and 65. | 0.87

Construct a 98% confidence interval for the population mean, μ. Assume the population has a normal distribution. A study of 14 bowlers showed that their average score was 192 with a standard deviation of 8. | (186.3, 197.7)

The diameters of ball bearings produced in a manufacturing process can be described using a uniform distribution over the interval 4.5 to 6.5 millimeters. Any ball bearing with a diameter of over 6.25 millimeters or under 4.75 millimeters is considered defective. What is the probability that a randomly selected ball bearing is defective? | 0.25

An article in Concrete Research presented data on compressive strength $$x$$ and intrinsic permeability $$y$$ of various concrete mixes and cures. Summary quantities are $$n = 14,\sum y\_i=572,\sum y\_i^2=23,\sum x\_i=43, \sum x\_i^2=157.42$$, and $$\sum x\_i y\_i=1697.8$$. Assume that the two variables are related according to the simple linear regression model. Calculate the least squares estimates of the slope. | -2.33

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 3 minutes. What proportion of customers having to hold more than 1.5 minutes will hang up before placing an order? | 0.60653

For two events A and B, P(A) = 0.4, P(B) = 0.5. Then P(A or B) equals | 0.7, if A and B are independent.

Construct a 90% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 15 randomly selected students has a grade point average of 2.86 with a standard deviation of 0.78. | (2.51, 3.21)

Assume that the heights of men are normally distributed with a mean of 69.8 inches and a standard deviation of 2.1 inches. If 36 men are randomly selected, find the probability that they have a mean height greater than 70.8 inches. | 0.0021

A random sample of 56 fluorescent light bulbs has a mean life of 645 hours with a population standard deviation of 31 hours. Construct a 95% confidence interval for the population mean. | (636.9, 653.1)

A recent survey of banks revealed the following distribution for the interest rate being charged on a home loan (based on a 30-year mortgage with a 10% down payment). Interest rate 7.0\% 7.5\% 8.0\% 8.5\% 9.0\% Probability 0.12 0.23 0.24 0.35 0.06 $$ If a bank is selected at random from this distribution, what is the chance that the interest rate charged on a home loan will exceed 8.0%? | 0.41

A local men's clothing store is being sold. The buyers are trying to estimate the percentage of items that are outdated. They will randomly sample among its 100000 items in order to determine the proportion of merchandise that is outdated. The current owners have never determined their outdated percentage and can not help the buyers. Approximately how large a sample do the buyers need in order to insure that they are 99% confident that the margin of error is within 3%? | 1842

The Kappa lata Sigma Fraternity polled its members on the weekend party theme. The vote was as follows: six for toga, four for hayride, eight for beer bash, and two for masquerade. Display the vote count in a Pareto chart | a.

Assume that male and female births are equally likely and that the birth of any child does not affect the probability of the gender of any other children. Find the probability of at most three boys in ten births. | 0.172

A salesperson knows that 20% of his presentations result in sales. Find the probabilities that in the next 60 presentations between 14 and 18, inclusive, result in sales. (Note: please give the answer as a real number accurate to 4 decimal places after the decimal point.) | 0.98

When considering area under the standard normal curve, decide whether the area between z = -0.2 and z = 0.2 is bigger than, smaller than, or equal to the area between z = -0.3 and z = 0.3. | smaller than

An entomologist writes an article in a scientific journal which claims that fewer than 19 in ten thousand male fireflies are unable to produce light due to a genetic mutation. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is to reject the null hypothesis, state the conclusion in nontechnical terms. | There is sufficient evidence to support the claim that the true proportion is less than 19 in ten thousand.

A manufacturer of golf equipment wishes to estimate the number of left-handed golfers. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proportion by more than 4%? A previous study indicates that the proportion of left-handed golfers is 10%. | 217

The manager of an electrical supply store measured the diameters of the rolls of wire in the inventory. The diameters of the rolls (in m) are listed below: 0.165 0.114 0.503 0.392 0.579 0.311. Find the range of data. | 0.465

Six pairs of data yield $$r = 0.444$$ and the regression equation $$\hat y= 5x+2.$$ Also, $$\overline{y}=18.3$$. What is the best predicted value of $$y$$ for $$x=5$$? | 18.3

In 2004, the infant mortality rate (per 1,000 live births) for the 50 states and the District of Columbia had a mean of 6.98 and a standard deviation of 1.62. Assuming that the distribution is normal, what percentage of states had an infant mortality rate between 5 and 7 percent? | 0.39

The number of monthly breakdowns of a conveyor belt at a local factory is a random variable having the Poisson distribution with λ = 2.8. Find the probability that the conveyor belt will function for a month without a breakdown. (Note: please give the answer as a real number accurate to 3 decimal places after the decimal point.) | 1.6

Fifty percent of the people that get mail-order catalogs order something. Find the probability that only three of 10 people getting these catalogs will order something. | 0.117

A private opinion poll is conducted for a politician to determine what proportion of the population favors decriminalizing marijuana possession. How large a sample is needed in order to be 99% confident that the sample proportion will not differ from the true proportion by more than 6%? | 461

Suppose a uniform random variable can be used to describe the outcome of an experiment with the outcomes ranging from 30 to 80. What is the probability that this experiment results in an outcome less than 40? | 0.2

Determine whether the hypothesis test involves a sampling distribution of means that is a normal distribution, Student t distribution, or neither. Claim: μ = 119. Sample data: n = 15, $$\overline{x} = 103,$$ s = 15.2. The sample data appear to come from a normally distributed population with unknown μ and | Student t

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.1 for a two-tailed test. | ±1.645

If either event A or event B must occur, then events A and B are said to be | None of the others.

A random sample of 150 students has a grade point average with a mean of 2.86 and with a standard deviation of 0.78. Construct the confidence interval for the population mean, $$\mu,$$ if $$\alpha = 0.02$$. Let $$z\_{0.01}=2.33;z\_{0.02}=2.05;t\_{0.01,149}=2.35;t\_{0.02,149}=2.07$$. | (2.71, 3.01)

A claim is made that the proportion of children who play sports is less than 0.5, and the sample statistics include n =1158 subjects with 30% saying that they play a sport. Find the value of the test statistic z using $$z=\frac{\overline{p}-p\_0}{\sqrt{\frac{p\_0(1-p\_0)}{n}}}$$ | -13.61

If a psychologist observed that four 5-year-old children initiated 2, 4, 6, and 12 incidents of aggression during a play period, the mean number of aggressive incidents for this group of four children was | 6

Find the variance for the given data. Round your answer to one more decimals than original data 1, 4, -5, -9, and 6 | 39.3

Many people think that a national lobby's successful fight against gun control legislation is reflecting the will of a minority of Americans. A random sample of 4000 citizens yielded 2250 who are in favor of gun control legislation. Estimate the true proportion of all Americans who are in favor of gun control legislation using a 90% confidence interval. | 0.5625 ±0 .0129

The following table contains the probability distribution for X = the number of retransmissions necessary to successfully transmit a 1024K data package through a double satellite media. X 0 1 2 3 P(X) 0.35 0.35 0.25 0.05 $$ The variance for the number of retransmissions is | 0.8

Find z if the normal curve area to the left of z is 0.1611. | -0.99

Find the standard normal-curve area to the left of z = -0.54. | 0.2946

In a pizza takeout restaurant, the following probability distribution was obtained. The random variable X represents the number of toppings for a large pizza. Find the mean and standard deviation for the random variable X. x 0 1 2 3 4 P(x) 0.30 0.40 0.20 0.06 0.04 | mean: 1.14; standard deviation: 1.04

Which of the following is not an element of descriptive statistical problems? | An inference made about the population based on the sample.

The probability that a person has immunity to a particular disease is 0.6. Find the mean for the random variable X, the number who have immunity in samples of size 26. | 15.6

A study of the checkout times of 100 customers at a supermarket resulted in the distribution below. Find the mean and standard deviation. x(minutes) f 0.5-1.5 15 1.5-2.5 20 2.5-3.5 15 3.5-4.5 20 4.5-5.5 30 | 3.3 and 1.4599

A supermarket manager has determined that the amount of time customers spend in the supermarket is approximately normally distributed with a mean of 45 minutes and a standard deviation of 6 minutes. Find the probability that a customer spends less than 48 minutes in the supermarket. | 0.6915

Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 20 college students had mean annual earnings of $3120 with a standard deviation of $677. | ($2803, $3437)

The mean replacement time for a random sample of 12 microwave ovens is 8.6 years with a standard deviation of 2.3 years. Construct the 98% confidence interval for the population variance. Assume the data are normally distributed. Let $$\chi^2\_{0.01,11}=24.72;\chi^2\_{0.99,11}=3.05$$. | (2.4, 19.1)

49, 34, and 48 students are selected from the Sophomore, Junior, and Senior classed with 496, 348, and 481 students respectively. Identify which of these types of sampling is used: Stratified, systematic, cluster, random. | Stratified

The conditional probability of event G, given the knowledge that event H has occurred, would be written as \_\_\_\_\_. | P(G | H)

A skeptical paranormal researcher claims that the proportion of Americans that have seen a UFO, p, is less than 2 in every one thousand. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p = 0.002 H1: p < 0.002

Suppose a uniform random variable can be used to describe the outcome of an experiment with outcomes ranging from 40 to 80. What is the probability that this experiment results in an outcome less than 50? | 0.25

Suppose a 95% confidence interval for population mean turns out to be (1000, 2100). To make more useful inferences from the data, it is desired to reduce the width of the confidence interval. Which of the following will result in a reduced interval width? | Both increase the sample size and decrease the confidence level.

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 45 minutes and a standard deviation of 10 minutes. A random sample of 16 cars is selected. What is the probability that the sample mean is between 45 and 52 minutes? | 0.4947

A researcher wishes to estimate the number of households with two cars. How large a sample is needed in order to be 98% confident that the sample proportion will not differ from the true proportion by more than 3%? A previous study indicates that the proportion of households with two cars is 24%. | 1101

The owner of a fish market has an assistant who has determined that the weights of catfish are normally distributed, with mean of 3.2 pounds and standard deviation of 0.8 pound. If a sample of 64 fish yields a mean of 3.4 pounds, what is probability of obtaining a sample mean this large or larger? | 0.0228

A researcher claims that 62% of voters favor gun control. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is failure to reject the null hypothesis, state the conclusion in nontechnical terms. | There is not sufficient evidence to warrant rejection of the claim that 62% of voters favor gun control.

Find the standard normal-curve area between z = -1.3 and z = -0.4. | 0.2478

The random variable X represents the number of credit cards that adults have along with the corresponding probabilities. Find the mean and standard deviation. x 0 1 2 3 4 P(x) 0.49 0.05 0.32 0.07 0.07 | mean: 1.18; standard deviation: 1.30

The lifetimes of light bulbs of a particular type are normally distributed with a mean of 360 hours and a standard deviation of 8 hours. What percentage of the bulbs have lifetimes that lie within 2 standard deviations of the mean? | 95%

In its standardized form, the normal distribution | be used to approximate discrete probability distributions.

A random sample of 150 students has a grade point average with a mean of 2.86 and with a population standard deviation of 0.78. Construct the confidence interval for the population mean, μ. Use a 98% confidence level. | (2.71, 3.01)

After completing an inventory of three warehouses, a golf club shaft manufacturer described its stock of 12,246 shafts with the percentages given in the table. Suppose a shaft is selected at random from the 12,246 currently in stock, and the warehouse number and type of shaft are observed. Type of Shaft Given that the shaft is produced in warehouse 2, find the probability it has an extra stiff shaft. | 0.219

Compute the standardized test statistic, $$\chi^2$$, to test the claim $$\sigma^2= 34.4$$ if $$n = 12, s =28.8$$, and $$\alpha=0.05$$. | 265.23

Two different tests are designed to measure employee productivity and dexterity. Several employees are randomly selected and tested with these results. Productivity,x 3 5 8 2 1 Dexterity,y 9 3 9 4 7$$ Find the equation of the regression line. | $$\hat y = 5.49+0.24x$$

A survey of the 9225 vehicles on the campus of State University yielded the following circle graph Find the number of hatchbacks. Round the result to the nearest whole number . | 2860

For a standard normal distribution, find the percentage of data that are more than 2 standard deviations below the mean or more than 3 standard deviations above the mean. | 2.41%

A committee of three people is to be formed. The three people will be selected from a list of five possible committee members. A simple random sample of three people is taken, without replacement, from the group of five people. Using the letters A, B, C, D, E to represent the five people, list the possible samples of size three and use your list to determine the probability that B is included in the sample. (Hint: There are 10 possible samples.) | e.

The on-line access computer service industry is growing at an extraordinary rate. Current estimates suggest that 20% of people with home-based computers have access to on-line services. Suppose that 15 people with home-based computers were randomly and independently sampled. What is the probability that exactly 5 of those sampled have access to on-line services at home? | 0.1032

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $25,000 is 80%. Of the households surveyed, 60% had incomes over $25,000 and 70% had 2 cars. The probability that annual household income is over $25,000 if the residents of a household do not own 2 cars is: | 0.40

The weekly salaries of elementary school teachers in one state are normally distributed with a mean of $490 and a standard deviation of $45. What is the probability that a randomly selected elementary school teacher earns more than $525 a week? | 0.2177

Find the mode(s) for the given data | 6.8 and 6.5

A researcher claims that the amounts of acetaminophen in a certain brand of cold tablets have a standard deviation different from the σ = 3.3 mg claimed by the manufacturer. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is failure to reject the null hypothesis, state the conclusion in nontechnical terms. | There is not sufficient evidence to support the claim that the standard deviation is different from 3.3 mg

The number of golf balls ordered by customers of a pro shop has the following probability distribution. x 3 6 9 12 15 P(x) 0.14 0.11 0.36 0.29 0.10 Find the mean of thethis probability distribution. | 9.3

The number of monthly breakdowns of a conveyor belt at a local factory is a random variable having the Poisson distribution with λ = 2.8. Find the probability that the conveyor belt will function for a month with one breakdown. (Note: please give the answer as a real number accurate to2 decimal places after the decimal point.) | There is not sufficient evidence to support the claim that the true proportion is less than 3 in ten thousand.

Fred, a local mechanic, gathered the following data regarding the price, in dollars, of an oil and filterchande at twelve competing service stations: Compute the range of data. | 14

In 2006, the General Social Survey asked subjects whether they favored or opposed the death penalty for persons convicted of murder and whether they favored or opposed a law requiring a person to obtain a permit before he or she could buy a gun. According to the survey results, 79.6% of respondents favored the gun law, 67.8% favored the death penalty for those convicted of murder and 52.7% were in favor of both. What is the probability that a randomly selected respondent was in favor of either the gun law or the death penalty for persons convicted of murder? Hint. Use the addition rules. | 0.947

Suppose that prices of a certain model of new homes are normally distributed with a mean of $150,000. Find the percentage of buyers who paid between $148,800 and $151,200 if the standard deviation is $1200. | 68%

Suppose a uniform random variable can be used to describe the outcome of an experiment with outcomes ranging from 50 to 70. What is the mean outcome of this experiment? | 60

A researcher claims that the amounts of acetaminophen in a certain brand of cold tablets have a standard deviation different from the σ = 3.3 mg claimed by the manufacturer. Assume that a hypothesis test of the given claim will be conducted. Identify the type II error for the test. | 3.3 mg when it is actually different from 3.3 mg.

A group of volunteers for a clinical trial consists of 81 women and 77 men. 18 of the women and 19 of the men have high blood pressure. If one of the volunteers is selected at random find the probability that the person has high blood pressure given that it is a woman. | 0.222

Construct a 95% confidence interval for the population standard deviation $$\sigma$$ of a random sample of 15 men who have a mean weight of 165.2 pounds with a standard deviation of 10.3 pounds. Assume the population is normally distributed. | (7.5, 16.2)

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.05 for a left-tailed test. | -1.645

The on-line access computer service industry is growing at an extraordinary rate. Current estimates suggest that 20% of people with home-based computers have access to on-line services. Suppose that 15 people with home-based computers were randomly and independently sampled. What is the probability that at least 1 of those sampled have access to on-line services at home? | 0.9648

Which of the following is always true? | If A and B are disjoint, then they cannot be independent.

The attendace counts for this season’s basketball games are listed below: 227 239 215 219 221 233 229 233 235 228 245 231 Use the data to creat a sterm plot. | d.

The highway speeds of 100 cars are summarized in the frequency distribution below. Find the mean speed. | 55.8

The editor of a particular women's magazine claims that the magazine is read by 60% of the female students on a college campus. Find the probability that in a random sample of 10 female students more than two read the magazine. (Note: please give the answer as a real number accurate to4 decimal places after the decimal point.) | 0.0512

A salesperson knows that 20% of her presentations result in sales. Find the probabilities that in the next 60 presentations at least 9 result in sales. | 0.8732

A T.V. show’s executives raised the fee for commercials following a report that the show received a “ No.1” rating in a survey of viewers. What type of the description is? | Observation study

Determine whether the given conditions justify testing a claim about a population mean μ. The sample size is n = 25,σ = 5.93, and the original population is normally distributed. | Yes

Carter Motor Company claims that its new sedan, the Libra, will average better than 23 miles per gallon in the city. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | gallon when it really is at most 23 miles per gallon.

A group of students were asked if they carry a credit card. The responses are listed in the table. If a student is selected at random, find the probability that he or she owns a credit card given that the student is a freshman. Round your answer to three decimal places. | 0.833

The time for a worker to assemble a component is normally distributed with mean 15 minutes and variance 4. Denote the mean assembly times of 16 day-shift workers and 9 night-shift workers by $$\overline{X}$$ and $$\overline{Y}$$, respectively. Assume that the assembly times of the workers are mutually independent.ComputeP($$\overline{X} $$ - $$\overline{Y}$$ < -1.5) is | 0.0359

For two events A and B, P(A) = 0.4, P(B) = 0.3, and P(A and B) = 0. It follows that A and B are | disjoint but not independent.

In one city, the probability that a person will pass his or her driving test on the first attempt is 0.68. 11 people are selected at random from among those taking their driving test for the first time. What is the probability that among these 11 people, the number passing the test is between 2 and 4 inclusive? | 0.0308

If $$X$$ is uniformly distributed over the interval $$[0, 10]$$. Compute the probability that $$2 < X < 9$$. | 7/10

The tread life of a particular brand of tire is a random variable best described by a normal distribution with a mean of 60,000 miles and a standard deviation of 2600 miles. What is the probability a particular tire of this brand will last longer than 57,400 miles? | 0.8413

A pollster wishes to estimate the proportion of United States voters who favor capital punishment. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proportion by more than 3%? | 1068

The probabilities that a batch of 4 computers will contain 0, 1, 2, 3, and 4 defective computers are 0.4521, 0.3970, 0.1307, 0.0191, and 0.0010, respectively. Find the variance for the probability distribution. | 0.59

Which of the following assignments of probabilities to the sample points A, B, and C is valid if A, B, and C are the only sample points in the experiment? | P(A) = 0, P(B) = , P(C) =

Patients arriving at an outpatient clinic follow an exponential distribution with mean 15 minutes. What is the average number of arrivals per minute? | 0.0667

It has been found that 40% of the employees who complete a sequence of executive seminars go on to become vice presidents. Assume that 10 graduates of the program are randomly selected. Find the probability that at least three become vice presidents. (Note: please give the answer as a real number accurate to3 decimal places after the decimal point.) | 0.0064

Carter Motor Company claims that its new sedan, the Libra, will average better than 19 miles per gallon in the city. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is to reject the null hypothesis, state the conclusion in nontechnical terms. | There is sufficient evidence to support the claim that the mean is greater than 19 miles per gallon.

Determine whether the given conditions justify testing a claim about a population mean μ. The sample size is n = 17, σ is not known, and the original population is normally distributed. | Yes

Find the critical value or values of $$\chi^2$$ based on the given information. H1: σ > 3.5 n = 14 α = 0.05 | 22.362

Parking at a large university has become a very big problem. University administrators are interested in determining the average parking time (e.g. the time it takes a student to find a parking spot) of its students. An administrator inconspicuously followed 210 students and carefully recorded their parking times. Identify the population of interest to the university administration. | the parking times of the entire set of students that park at the university

A researcher claims that the amounts of acetaminophen in a certain brand of cold tablets have a standard deviation different from the σ = 3.3 mg claimed by the manufacturer. Express the null hypothesis H 0 and the alternative hypothesis H 1 in symbolic form. | H0:σ = 3.3 mg H1:σ ≠ 3.3 mg

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $25,000 is 80%. Of the households surveyed, 60% had incomes over $25,000 and 70% had 2 cars. The probability that the residents of a household own 2 cars and have an income less than or equal to $25,000 a year is: | 0.22

The grade point averages for 10 randomly selected high school students are listed below. Assume the grade point averages are normally distributed. 2.0 3.2 1.8 2.9 0.9 4.0 3.3 2.9 3.6 0.8 Find a 98% confidence interval for the true mean. | (1.55, 3.53)

An electrical firm manufactures a certain type of light bulb that has a mean light of 1,800 hours and a standard deviation of 200 hours. Find the probability that a random sample of 100 bulbs will have an average life of not more than 1775 hours and not less than 1760 hours. | 0.0828

A normal distribution has mean μ = 60 and standard deviation = 6, find the area underthe curve between 58 and 63. | 0.322

The age distribution of students at a community college is given below. Age (years) Number of students Under 21 416 21-24 419 25-28 263 29-32 151 33-36 93 37-40 59 Over 40 85 A student from the community college is selected at random. Find the probability that the student is under 37 years old. Give your answer as a decimal rounded to three decimal places. | 0.903

If a random variable has the normal distribution with μ = 30 and σ = 5, find the probability that it will take on the value less than 32. | 0.6554

Which of the following is not an element of descriptive statistical problems? | predictions are made about a larger set of data

Assume that X has a normal distribution with the mean is μ = 60.0 and the standard deviation is σ = 4.0. Find the probability that X is less than 53.0. | 0.0401

The employees of a company were surveyed on questions regarding their educational background and marital status. Of the 600 employees, 400 had college degrees, 100 were single, and 60 were single college graduates. The probability that an employee of the company is single or has a college degree is | 0.733

LetZ is a standard normal variable, find theprobability that Z lies between -2.41 and 0. | 0.4920

Use the given information to find the P-value. The test statistic in a two-tailed test is z = -1.63. | 0.1032

A die is rolled 18 times and the number of twos that come up is tallied. If this experiment is repeated many times, find the standard deviation for the random variable X, the number of twos. | 1.581

A supermarket manager has determined that the amount of time customers spend in the supermarket is approximately normally distributed with a mean of 45 minutes and a standard deviation of 6 minutes. Find the probability that a customer spends between 39 and 43 minutes in the supermarket. | 0.2120

The principal of a middle school claims that test scores of the seventh-graders at his school vary less than the test scores of seventh-graders at a neighboring school, which have variation described by σ = 14.7. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the standard deviation is at least 14.7 when it really is at least 14.7.

Elaine gets quiz grades of 67, 64, and 87. She gets a 84 on her final exam. Find the mean grade if the quizzes each count for 15% and her final exam exam counts for 55% of the final grade. | 78.9

A melting point test of $$n = 10$$ samples of a binder used in manufacturing a rocket propellant resulted in $$\overline{x}=154.2^oF$$. Assume that melting point is normally distributed with $$\sigma=1.5^oF$$. What is the P-value for the testing problem $$H\_0:\mu=155/ H\_1 eq 155$$? Let $$P(Z<1.67)=0.952$$. | 0.096

It is desired to estimate the average total compensation of CEOs in the Service industry. Data were randomly collected from 18 CEOs and the 97% confidence interval was calculated to be ($2,181,260, $5,836,180). Based on the interval above, do you believe the average total compensation of CEOs in the Service industry is more than $3,000,000? | I cannot conclude that the average exceeds $3,000,000 at the 97% confidence level.

Patients arriving at an outpatient clinic follow an exponential distribution at a rate of 15 patients per hour. What is the probability that a randomly chosen arrival to be more than 5 minutes? | 0.2865

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 45 minutes and a standard deviation of 10 minutes. A random sample of 16 cars is selected. So, 90% of the sample means will be greater than what value? | 41.8 minutes

It has been found that 40% of the employees who complete a sequence of executive seminars go on to become vice presidents. Assume that 10 graduates of the program are randomly selected.Find the probability that exactly 5 become vice presidents. (Note: please give the answer as a real number accurate to3 decimal places after the decimal point.) | 0.67

A group of volunteers for a clinical trial consists of 83 women and 78 men. 21 of the women and 20 of the men have high blood pressure. If one of the volunteers is selected at random find the probability that the person is a man given that they have high blood pressure. | 0.488

The lengths of pregnancies are normally distributed with a mean of 264 days and a standard deviation of 25 days. If 100 women are randomly selected, find the probability that they have a mean pregnancy between 264 days and 266 days. | 0.2881

A group of 49 randomly selected students has a mean age of 22.4 years with a population standard deviation of 3.8. Construct a 98% confidence interval for the population mean. | (21.1, 23.7)

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 45 minutes and a standard deviation of 10 minutes. A random sample of 16 cars is selected. What is the probability that the sample mean will be between 39 and 48 minutes? | 0.8767

The average score of all golfers for a particular course has a mean of 79 and a standard deviation of 5. Suppose 100 golfers played the course today. Find the probability that the average score of the 100 golfers exceeded 80. | 0.0228

The diameters of ball bearings produced in a manufacturing process can be described using a uniform distribution over the interval 2.5 to 4.5 millimeters. What is the mean diameter of ball bearings produced in this manufacturing process? | 3.5 millimeters

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 3 minutes. What proportion of customers having to hold more than 4.5 minutes will hang up before placing an order? | 0.22313

If we know that the length of time it takes a college student to find a parking spot in the library parking lot follows a normal distribution with a mean of 3.5 minutes and a standard deviation of 1 minute, find the probability that a randomly selected college student will find a parking spot in the library parking lot in less than 3 minutes. Let $$P(Z<-0.62) =0.2674;P(Z<-0.5) = 0.3085; P(Z<-0.37)=0.3551;P(Z<-0.87)=0.1915$$. | 0.3085

The owner of a football team claims that the average attendance at games is over 727, and he is therefore justified in moving the team to a city with a larger stadium. Assuming that a hypothesis test of the claim has been conducted and that the conclusion is failure to reject the null hypothesis, state the conclusion in nontechnical terms. | There is not sufficient evidence to support the claim that the mean attendance is greater than 727.

Find the percentile for the data point. Data set: 51 36 48 75 75 75 49 data point: 51 | 43

Car batteries produced by company A have a mean life of 3.5 years with a standard deviation of 0.4 years. A similar battery producted by company B has a mean life of 3.3 years and a standard deviation of 0.3 years. What is the probability that a random sample of 25 batteries from company A will have a mean life of at least 0.4 years more thanthe mean life of a sample of 36 batteries from company B? | 0.0166

A researcher at a major hospital wishes to estimate the proportion of the adult population of the United States that has high blood pressure. How large a sample is needed in order to be 98% confident that the sample proportion will not differ from the true proportion by more than 6%? | 378

If sample points A, B, C, and D are the only possible outcomes of an experiment, find the probability of D using the table below. . | a.

A bank's loan officer rates applicants for credit. The ratings are normally distributed with a mean of 200 and a standard deviation of 50. If an applicant is randomly selected, find the probability of a rating that is between 200 and 275. | 0.4332

The Columbia Power Company experiences power failures with a mean of 0.210 per day. Use the Poisson Distribution to find the probability that there are exactly two power failures in a particular day. | 0.018

For some positive value of $$x$$, the probability that a standard normal variable is between 0 and $$x$$ is 0.1255. What is the value of $$x$$? Let $$P(Z>0)=0.5; P(Z<0.32) = 0.6255; P(Z<0.99)=0.8389$$. | 0.32

Let $$\overline{X}$$ denote the sample mean of a random sample of size n1 = 16 taken from a normal distribution N(m, 36), and let $$\overline{Y}$$ denote the sample mean of a random sample of size n2 = 25 taken from a different normal distribution $$N(\mu, 9).$$ The distribution of $$\overline{X}$$ - $$\overline{Y}$$ is | normal with mean 0 and standard deviation 1.6155

A sample consists of every 49th student from a group of 496 students. Identify which of these types of sampling is used: Stratified, systematic, cluster, random. | Systematic

The produce manager at a food store was interested in determining how many apples a person buys when they buy apples. He asked the cashiers over a weekend to count how many apples a person bought when they bought apples and record this number for analysis at a later time. The data is given below in the table. The random variable x represents the number of apples purchased and P(x) represents the probability that a customer will buy x apples. Determine the variance of the number of apples purchased by a customer. x 1 2 3 4 5 6 7 8 9 10 P(x) 0.05 0.19 0.20 0.25 0.12 0.10 0 0.08 0 0.01 | 3.57

The probability that a house in an urban area will be burglarized is 5%. If 20 houses are randomly selected, what is the mean of the number of houses burglarized? | 1

Suppose that P(A | B) = 0.6, P(A) = 0.5 and P(B) = 0.1. Find the value of P(B | A). | 0.12

The probability that an individual is left-handed is 0.15. In a class of 93 students, what is the probability of finding five left-handers? | 0.002

A tennis player makes a successful first serve 59% of the time. If she serves 7 times, what is the probability that she gets exactly3 first serves in? Assume that each serve is independent of the others. | 0.2031

A study of the amount of time it take a mechanic to rebuild the transmission for a 1992 Chevrolet Cavalier shows that the mean is 8.4 hours and the standard deviation is 1.8 hours. If 40 mechanics are randomly selected, find the probability that their mean rebuild time exceeds 9.1 hours. | 0.0069

A confidence interval was used to estimate the proportion of statistics students that are females. A random sample of 72 statistics students generated the following 90% confidence interval: (0.438, 0.642). Based on the interval above, is the population proportion of females equal to 0.60? | Maybe. 0.60 is a believable value of the population proportion based on the information above.

An employee at the local ice cream parlor asks three customers if they like chocolate ice cream. What is the sample? | three selected custermers

The width of a confidence interval estimate for a proportion will be | narrower for 90% confidence than for 95% confidence.

A greenhouse is offering a sale on tulip bulbs because they have inadvertently mixed pink bulbs with red bulbs. If 40% of the bulbs are pink and 60% are red, what is the probability that at least one of the bulbs will be pink if 4 bulbs are purchased? | 0.8704

A cereal company claims that the mean weight of the cereal in its packets is at least 14 oz. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the mean weight is at least 14 oz. when it really is at least 14 oz.

Find the probability that in 200 tosses of a fair six-sided die, a five will be obtained at most 40 times. | 0.9105

The probability that house sales will increase in the next 6 months is estimated to be 0.25. The probability that the interest rates on housing loans will go up in the same period is estimated to be 0.74. The probability that house sales or interest rates will go up during the next 6 months is estimated to be 0.89. The probability that both house sales and interest rates will increase during the next 6 months is | 0.10

A basketball player is asked to shot free throws in sets of four. The player shoots 100 sets of 4 free throws. The probability distribution for making a particular number of free throws id given below. Determine the standard deviation for this discrete probability distribution. x 0 1 2 3 4 P(x) 0.02 0.07 0.22 0.27 0.42 | 1.05

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 2.8 minutes. What proportion of callers is put on hold longer than 2.8 minutes? | 0.367879

In a recent study of 42 eighth graders, the mean number of hours per week that they watched television was 19.6 with a population standard deviation of 5.8 hours. Find the 98% confidence interval for the population mean. | (17.5, 21.7)

The probability that a tennis set will go to a tie-breaker is 17%. What is the probability that two of three sets will go to tie-breakers? | 0.072

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $30,000 is 70%. Of the households surveyed, 50% had incomes over $30,000 and 70% had 2 cars. The probability that the residents of a household own 2 cars and have an income over $30,000 a year is: | 0.35

According to the Center for Disease Control, in 2004, 67.5% of all adults between the ages of 18 and 44 were considered current drinkers. Based on this estimate, if three randomly selected adults between the ages of 18 and 44 are selected, what is the probability that at least one is a current drinker? | 0.97

Assume that male and female births are equally likely and that the birth of any child does not affect the probability of the gender of any other children. Find the probability of at most two boys in five births. | 0.500

Which of the following assignments of probabilities to the sample points A, B, C and D is valid if A, B, C, and D are the only sample points in the experiment? | P(A) = 0, P(B) = , P(C) = , P(D) = 0

The following table shows the political affiliation of voters in one city and their positions on stronger gun control laws. | 0.211

An aircraft emergency locator transmitter (ELT) is a device designed to transmit a signal in the case of a crash. The Altigauge Manufacturing Company makes 85% of the ELTs, the Bryant Company makes 10% of them, and the Chartair Company makes the other 5%. The ELTs made by Altigauge have a 3% rate of defects, the Bryant ELTs have a 5% rate of defects, and the Chartair ELTs have a 10% rate of defects. If a randomly selected ELT is then tested and is found to be defective, find the probability that it was made by the Altigauge Manufacturing Company. | 0.718

Given that events C and D are independent, P(C) = 0.3, and P(D) = 0.6, are C and D mutually exclusive? | no

A random number generator is set top generate integer random numbers between 0 and 9 inclusive following a uniform distribution. What is the probability of the random number generator generating a 6? | 1/10

A percentage distribution is given below for the size of families in one U.S. city. Size | 0.950

An experiment consists of randomly choosing a number between 1 and 10. Let E be the event that the number chosen is odd. List the sample points in | {1, 3, 5, 7, 9}

It was found that 60% of the workers were white, 30% were black and 10% are other races. Given that a worker was white, the probability that the worker had claimed bias was 30%. Given that a worker was black, the probability that the worker had claimed bias was 40%. Given that a worker was other race, the probability that the worker had claimed bias was 0%. If a randomly selected worker had claimed bias, what is the probability that the worker is black? | 0.4

Given events A and B with probabilities P(A) = 0.75 and P(B) = 0.15, are A and B mutually exclusive? | cannot be determined

The probability that a house in an urban area will be burglarized is 3%. If 30 houses are randomly selected, what is the probability that none of the houses will be burglarized? | 0.4010

After completing an inventory of three warehouses, a golf club shaft manufacturer described its stock of 14,542 shafts with the percentages given in the table. Suppose a shaft is selected at random from the 14,542 currently in stock, and the warehouse number and type of shaft are observed. Type of Shaft Given that the shaft is produced in warehouse 2, find the probability it has an stiff shaft. | 0.344

According to a survey result, 79.6% of respondents favored the gun law, 77.8% favored the death penalty for those convicted of murder and 62.7% were in favor of both. What is the probability that a randomly selected respondent was in favor of either the gun law or the death penalty for persons convicted of murder? Hint. Use the addition rules. | 0.947

The following table shows the political affiliation of voters in one city and their positions on stronger gun control laws. | 0.314

The New York State Health Department reports a 12% rate of the HIV virus for the “at-risk” population. Under certain conditions, a preliminary screening test for the HIV virus is correct 99% of the time. If someone is randomly selected from the at-risk population, what is the probability that they have the HIV virus if it is known that they have tested positive in the initial screening? | 0.931

Two events A and B are said to be \_\_\_\_\_\_\_\_\_ if P(A | B) = P(A) or if P(B | A) = P(B). | independent

A committee of three people is to be formed. The three people will be selected from a list of six possible committee members. A simple random sample of three people is taken, without replacement, from the group of six people. Using the letters A, B, C, D, E, F to represent the six people, list the possible samples of size three and use your list to determine the probability that B is included in the sample. (Hint: There are 20 possible samples.) | 1/2

A research group asked the students if they carry a credit card. The responses are listed in the table. If a student is randomly selected, find the probability that he or she owns a credit card given that the student is a freshman. Round your answer to three decimal places. | 0.833

A bin contains 15 defective (that immediately fail when put in use), 20 partially defective (that fail after a couple of hours of use), and 30 acceptable transistors. A transistor is chosen at random from the bin and put into use. If it does not immediately fail, what is the probability it is acceptable? | 0.60

A group of volunteers for a clinical trial consists of 123 women and 178 men. 54 of the women and 46 of the men have high blood pressure. If one of the volunteers is selected at random find the probability that the person is a man given that they have high blood pressure. | 0.460

It was found that 60% of the workers were white, 30% were black and 10% are other races. Given that a worker was white, the probability that the worker had claimed bias was 30%. Given that a worker was black, the probability that the worker had claimed bias was 40%. Given that a worker was other race, the probability that the worker had claimed bias was 0%. If a randomly selected worker had claimed bias, what is the probability that the worker is white? | 0.6

If P(A) = 0.45, P(B) = 0.25, and P(B | A) = 0.45, are A and B independent? | no

Suppose that on a particular multiple choice question, 96% of the students answered correctly. What is the probability that a randomly selected student answered the question incorrectly? | 0.04

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $20,000 is 90%. Of the households surveyed, 60% had incomes over $20,000 and 60% had 2 cars. The probability that the residents of a household own 2 cars and have an income less than or equal to $20,000 a year is: | 0.06

The age distribution of students at a community college is given below. Age (years) | 0.454

The distribution of B.A. degrees conferred by a local college is listed below, by major. Major | 0.966

Mr. Ômô figures that there is a 65% chance that his university will set up a branch office in Lao Cai. If it does, he is 90% certain that she will be made director of this new branch. What is the probability that Ômô will be a Lao Cai branch office director? | 0.585

Flip a coin three times, create the sample space of possible outcomes (H: Head, T: Tail). | HHH HHT HTH HTT THH THT TTH TTT

Given events C and D with probabilities P(C) = 0.3, P(D) = 0.2, and P(C and D) = 0.1, are C and D independent? | no

Brandon and Samantha each carry a bag containing a banana, a chocolate bar, and a licorice stick. Simultaneously, they take out a single food item and consume it. The possible pairs of food items that Brandon and Samantha consumed are as follows. chocolate bar - chocolate bar licorice stick - chocolate bar banana - banana chocolate bar - licorice stick licorice stick - licorice stick chocolate bar - banana banana - licorice stick licorice stick - banana banana - chocolate bar Find the probability that exactly one chocolate bar was eaten. | 4/9

The probability that a student at a certain college is male is 0.55. The probability that a student at that college has a job off campus is 0.67. The probability that a student at the college is male and has a job off campus is 0.35. If a student is chosen at random from the college, what is the probability that the student is male or has an off campus job? | 0.87

Sixty percent of the people that get mail-order catalogs order something. Find the probability that only three of 8 people getting these catalogs will order something. | 0.124

Both Nualart and Tom have a bag of candy containing a lollipop (LP), a cherry drop (CD), and a lemon drop (LD). Each takes out a piece and eats it. What are the possible pairs of candies eaten? Create the sample space of possible outcomes. | LD-LD CD-LD LP-LP LD-CD CD-CD LD-LP LP-CD

At a Texas college, 60% of the students are from the southern part of the state, 30% are from the northern part of the state, and the remaining 10% are from out-of-state. All students must take and pass an Entry Level Math (ELM) test. 60% of the southerners have passed the ELM, 70% of the northerners have passed the ELM, and 90% of the out-of-state have passed the ELM. If a randomly selected student has passed the ELM, the probability the student is from out-of-state is \_\_\_\_\_\_\_\_. | 0.136

A group of volunteers for a clinical trial consists of 88 women and 77 men. 28 of the women and 39 of the men have high blood pressure. If one of the volunteers is selected at random find the probability that the person has high blood pressure given that it is a woman. | 0.318

According to a 2007 report published by the Columbia University, 69% of teens have family dinners five or more times a week, 11% of teens have used marijuana and the proportion of teens who have family dinners 5 or more times a week or use marijuana is 0.65. What is the probability that a teen has family dinners five or more times a week and uses marijuana? Hint. Use the addition rules. | 0.15

If you flip a coin three times, the possible outcomes are HHH HHT HTH HTT THH THT TTH TTT. What is the probability of getting at most one head? | 1/2

Flip a coin twice, create the sample space of possible outcomes (H: Head, T: Tail). | HH HT TH TT

In 2006, the General Social Survey asked 4,491 respondents how often they attended religious services. The responses were as follows: Frequency | 0.398

If two events A and B are \_\_\_\_\_\_\_\_\_\_, then P(A and B) = P(A)P(B). | independent

A greenhouse is offering a sale on tulip bulbs because they have inadvertently mixed pink bulbs with red bulbs. If 35% of the bulbs are pink and 65% are red, what is the probability that at least one of the bulbs will be pink if 5 bulbs are purchased? | 0.8840

At a Ohio college, 25% of students speak Spanish, 5% speak French, and 3% speak both languages. What is the probability that a student chosen at random from the college speaks Spanish but not French? | 0.22

Ms. Anne figures that there is a 40% chance that her company will set up a branch office in Ohio. If it does, she is 70% certain that she will be made manager of this new operation. What is the probability that Anne will be a Ohio branch office manager? | 0.28

According to the U.S. census, in 2005 25% of homicide victims were known to be female, 8.7% were known to be under the age of 18 and 2.7% were known to be females under the age of 18. What is the probability that a murder victim was known to be female or under the age of 18 based on these 2005 estimates? | 0.310

Forty percent of babies born in the U.S. in 2004 were still being breastfed at 6 months of age. If 4 children who were born in the U.S. in 2004 are randomly selected, what is the probability that none of them were breastfed for at least 6 months? | 0.1296

The probability is 5% that an electrical connector that is kept dry fails during the warranty period of a portable computer. If the connector is ever wet, the probability of a failure during the warranty period is 20%. If 90% of the connectors are kept dry and 10% are wet, what proportion of connectors fail during the warranty period? | 0.065

Which of the following is a continuous quantitative variable? | The volume of gasoline that is lost to evaporation during the filling of a gas tank.

Assume that P(E) = 0.15 and P(F) = 0.48. If E and F are independent, find P(E and F). | 0.072

In Orange County, 51% of the adults are males. One adult is randomly selected for a survey involving credit card usage. It is later learned that the selected survey subject was smoking a cigar. Also, 7.5% of males smoke cigars, whereas 1.9% of females smoke cigars. Use this additional information to find the probability that the selected subject is a male. | 0.804

Given that events A and B are mutually exclusive and P(A) = 0.5 and P(B) =0.7, are A and B independent? | no

According to a survey of American households, the probability that the residents own 2 cars if annual household income is over $35,000 is 70%. Of the households surveyed, 50% had incomes over $35,000 and 80% had 2 cars. The probability that the residents of a household do not own 2 cars and have an income over $35,000 a year is: | 0.15

According to a survey of American households, the probability that the residents own 3 cars if annual household income is over $25,500 is 83%. Of the households surveyed, 62% had incomes over $25,500 and 84% had 3 cars. The probability that annual household income is over $25,500 if the residents of a household own 3 cars is: | 0.61

If P(A) = 0.72, P(B) = 0.11, and A and B are independent, find P(A | B). | 0.72

Assume that a researcher randomly selects 14 newborn babies and counts the number of girls selected, X. The probabilities corresponding to the 14 possible values of X are summarized in the given table. Answer the question using the following table. X(girls) | 0.029

Assume that P(A) = 0.7 and P(B) = 0.2. If A and B are independent, find P(A and B). | 0.14

In a study of pleas and prison sentences, it is found that 35% of the subjects studied were sent to prison. Among those sent to prison, 30% chose to plead guilty. Among those not sent to prison, 50% chose to plead guilty. If a study subject is randomly selected and it is then found that the subject entered a guilty plea, find the probability that this person was not sent to prison. | 0.756

Two white sheep mate. The male has both a white and a black fur-color gene. The female has only white fur-color genes. The fur color of the offspring depends on the pairs of fur-color genes that they receive. Assume that neither the white nor the black gene dominates. List the possible outcomes. W = white and B = black. | WW, BW

A percentage distribution is given below for the size of families in one U.S. city. Size | 0.169

Given events A and B with probabilities P(A) = 0.5,P(B) = 0.4, and P(A and B) = 0.2, are A and B independent? | yes

A survey of senior citizens at a doctor's office shows that 65% take blood pressure-lowering medication, 38% take cholesterol-lowering medication, and 7% take both medications. What is the probability that a senior citizen takes either blood pressure-lowering or cholesterol-lowering medication? | 0.96

Hahn is having his sixth litter. The prior litters have either been three normal pups or two normal pups and a runt. Assume the probability of either outcome is 50%. Create the sample space of possible outcomes (Normal: N, Runt: R). | NNR NNN

Suppose that the probability that a particular brand of light bulb fails before 1000 hours of use is 0.3. If you purchase 3 of these bulbs, what is the probability that at least one of them lasts 1000 hours or more? | 0.973

The age distribution of students at a community college is given below. Age (years) | 0.903

Suppose a uniform random variable can be used to describe the outcome of an experiment with outcomes ranging from 50 to 60. What is the mean outcome of this experiment? | 55

If the standard deviation for a Poisson distribution is known to be 3, the expected value of that Poison distribution is: | 9.

Product codes of 6, 7, 8 or 9 letters are equally likely. Which of the following statements are true? (i) Standard deviation of the number of letters in one code is 1.25. (ii) The probability of the event that the code has at least 7 letters is 0.5 | None of the other choices is correct

Assume that a procedure yields a binomial distribution with a trial repeated 4 times. Use the binomial probability formula to find the probability of 3 successes given the probability 1/6 of success on a single trial. | 0.0154

According to police sources a car with a certain protection system will be recovered 78% of the time. Find the probability that 3 of 8 stolen cars will be recovered. | 0.0137

Assume that the weights of quarters are normally distributed with a mean of 5.70 g and a standard deviation 0.062 g. A vending machine will only accept coins weighing between 5.48 g and 5.82 g. What percentage of legal quarters will be rejected? | 2.67%

The cumulative distribution function of a random variable X is given by What is the value of the probability density function at x = 1? | 0.15

Patients arriving at an outpatient clinic follow an exponential distribution at a rate of 15 patients per hour. What is the probability that a randomly chosen arrival to be less than 8 minutes? | 0.8647

The probability that a radish seed will germinate is 0.26. A gardener plants seeds in batches of 52. Find the standard deviation for the random variable X, the number of seeds germinating in each batch. | 3.16

| 1.55

A machine is set to pump cleanser into a process at the rate of 10 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 9 to 13.5 gallons per minute. Find the variance of the distribution. | 1.6875

The manager of a movie theater has determined that the distribution of customers arriving at the concession stand is Poisson distributed with a standard deviation equal to 2 people per 10 minutes. If the servers can accommodate 3 customers in a 10-minute period, what is the probability that the servers will be idle for an entire ten minute period? | 0.0183

The tread life of a particular brand of tire is a random variable best described by a normal distribution with a mean of 65,000 miles and a standard deviation of 1500 miles. What warranty should the company use if they want 95% of the tires to outlast the warranty? | 62,533 miles

Let the random variable X have a discrete uniform distribution on the integers 12, 13, ..., 19. Find the value of P(X > 17). | 0.25

A multiple choice test has 22 questions each of which has 4 possible answers, only one of which is correct. If Judy, who forgot to study for the test, guesses on all questions, what is the probability that she will answer exactly 8 questions correctly? | 0.0869

An airline reports that it has been experiencing a 12% rate of no-shows on advanced reservations. Among 100 advanced reservations, find the probability that there will be fewer than 15 no-shows. | 0.7840

Suppose that prices of a certain model of new homes are normally distributed with a mean of $150,000. Find the percentage of buyers who paid between $148,885 and $151,220 if the standard deviation is $1250. | 64.9%

The number of hours you spend looking at YouTube on a typical Saturday night is distributed according to the density function with . Find the probability that, on a typical Saturday night, you spend between 0.75 and 1.25 hours watching YouTube. | 0.3602

According to a CNN poll taken in February of 2008, 67% of respondents disapproved of the overall job that President Bush was doing. Based on this poll, for samples of size 140, what is the mean number of American adults who disapprove of the overall job that President Bush is doing? | 93.8

The random variable X represents the number of tests that a patient entering a hospital will have along with the corresponding probabilities. Find the mean and standard deviation for the random variable X. x | mean: 1.47; standard deviation: 1.19

Suppose a uniform random variable can be used to describe the outcome of an experiment with outcomes ranging from 41 to 81. What is the probability that this experiment results in an outcome less than 56? | 0.375

In a recent survey, 85% of the community favored building a police substation in their neighborhood. If 20 citizens are chosen, what is the probability that the number favoring the substation is exactly 12? | 0.0046

Police estimate that 22% of drivers drive without their seat belts. If they stop 4 drivers at random, find the probability that all of them are wearing their seat belts. | 0.3701

The length of time it takes college students to find a parking spot in the library parking lot follows a normal distribution with a mean of 10 minutes and a standard deviation of 2.1 minute. Find the probability that a randomly selected college student will take between 8.5 and 10.5 minutes to find a parking spot in the library lot. | 0.3566

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 5 minutes. What proportion of customers having to hold more than 6.5 minutes will hang up before placing an order? | 0.27253

The probability that a person has immunity to a particular disease is 0.06. Find the mean for the random variable X, the number who have immunity in samples of size 106. | 6.36

The diameters of ball bearings produced in a manufacturing process can be described using a uniform distribution over the interval 4.5 to 7.5 millimeters. Any ball bearing with a diameter of over 6.25 millimeters or under 4.55 millimeters is considered defective. What is the probability that a randomly selected ball bearing is defective? | 0.433

The number of visible defects on a product container is thought to be Poisson distributed with a mean equal to 2.1. Based on this, how many defects should be expected if 2 containers are inspected? | 4.2

Product codes of 3, 4 or 5 letters are equally likely. What is the mean of the number of letters in 20 codes? | 80

An archer is able to hit the bull's-eye 57% of the time. If she shoots 15 arrows, what is the probability that she gets exactly 6 bull's-eyes? Assume each shot is independent of the others. | 0.0863

Let X be a continuous random variable with probability density function defined by What value must k take for this to be a valid density? | 2/3

Patients arriving at an outpatient clinic follow an exponential distribution at a rate of 15 patients per hour. What is the probability that a randomly chosen arrival to be more than 12 minutes? | 0.0498

Find the standard deviation for the binomial distribution which has the stated values of n = 2661 and p = 0.63. Round your answer to the nearest hundredth. | 24.91

The probabilities that a batch of 4 computers will contain 0, 1, 2, 3, and 4 defective computers are 0.4521, 0.3970, 0.1307, 0.0191, and 0.0010, respectively. Find the variance for the probability distribution. | 0.69

The number of visible defects on a product container is thought to be Poisson distributed with a mean equal to 4.3. Based on this, the probability that 2 containers will contain less than 2 defects is: | 0.0018

Product codes of 1, 2 or 3 letters are equally likely. What is the mean of the number of letters in 50 codes? | 100

A card game is played in which the player wins if a face card is drawn (king, queen, jack) from a deck of 52 cards. If the player plays 10 times, what is the probability that the number of wins for the player is 5? | 0.0444

The probability that an individual is left-handed is 0.15. In a class of 30 students, what is the probability of finding five left-handers? | 0.186

In 2005, the property crime rates (per 100,000 residents) for the 50 states and the District of Columbia had a mean of 3477 and a standard deviation of 747. Assuming the distribution of property crime rates is normal, what percentage of the states had property crime rates between 3362 and 4055? | 0.34

The time (in years) until the first critical-part failure for a certain car is exponentially distributed with a mean of 3.2 years. Find the probability that the time until the first critical-part failure is less than 1 year. | 0.268384

A die is rolled 22 times and the number of times that two shows on the upper face is counted. If this experiment is repeated many times, find the mean for the number of twos. | 3.67

The following table is the probability distribution of the number of golf balls ordered by customers x | 9.39

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 12.4 ounces and a standard deviation of 4.3 ounces. Find the number of ounces above which 86% of the dispensed sodas will fall. | 7.8

In a recent survey, 95% of the community favored building a police substation in their neighborhood. If 50 citizens are chosen, what is the probability that the number favoring the substation is exactly 42? | 0.0024

The on-line access computer service industry is growing at an extraordinary rate. Current estimates suggest that 10% of people with home-based computers have access to on-line services. Suppose that 8 people with home-based computers were randomly and independently sampled. What is the probability that at least 1 of those sampled have access to on-line services at home? | 0.5695

The tread life of a particular brand of tire is a random variable best described by a normal distribution with a mean of 60,500 miles and a standard deviation of 2800 miles. What is the probability a particular tire of this brand will last longer than 58,400 miles? | 0.7734

Let X be a continuous random variable with probability density function defined by Find the mean of X | 1/2

On a 50-question multiple choice test , each question has four possible answers, one of which is correct. For students who guess at all answers, find the mean for the random variable X, the number of correct answers. | 12.5

In a pizza takeout restaurant, the following probability distribution was obtained. The random variable X represents the number of toppings for a large pizza. Find the mean and standard deviation for the random variable X. x | mean: 1.04; standard deviation: 1.09

Suppose a uniform random variable can be used to describe the outcome of an experiment with the outcomes ranging from 30 to 80. What is the probability that this experiment results in an outcome less than 45? | 0.30

The Columbia Power Company experiences power failures with a mean of 0.120 per day. Use the Poisson Distribution to find the probability that there are exactly two power failures in a particular day. | 0.006

Let X be a normal random variable with a mean of 18.2 and a variance of 5. Find the value of c if P(X -1 < c) = 0.5221. | 17.32

A basketball player has made 95% of his foul shots during the season. If he shoots 3 foul shots in tonight's game, what is the probability that he makes all of the shots? | 0.857

A machine pours beer into 16 oz. bottles. Experience has shown that the number of ounces poured is normally distributed with a standard deviation of 1.5 ounces. Find the probabilities that the amount of beer the machine will pour into the next bottle will be more than 16.5 ounces. | 0.3385

The probability density function of X, the lifetime of a certain type of electronic device (measured in hours), is given by Determine the value of | 0.5

| 2.46

Suppose that X has a discrete uniform distribution on the integers 20 to 79. Which of the followings are true? (i) P(X > 41) = 13/20 (ii) E(10X)= 495 | Both (i) and (ii)

A telemarketer found that there was a 1.5% chance of a sale from his phone solicitations. Find the probability of getting 28 or more sales for 1000 telephone calls. | 0.0016

Find the probability that in 20 tosses of a fair six-sided die, a five will be obtained at least 5 times. | 0.2313

A supermarket manager has determined that the amount of time customers spend in the supermarket is approximately normally distributed with a mean of 43.2 minutes and a standard deviation of 5.2 minutes. Find the probability that a customer spends less than 46.5 minutes in the supermarket. | 0.7180

Let X represent the amount of time it takes a student to park in the library parking lot at the university. If we know that the distribution of parking times can be modeled using an exponential distribution with a mean of 4 minutes, find the probability that it will take a randomly selected student between 2.5 and 10 minutes to park in the library lot. | 0.453176

Find the mean for the binomial distribution which has the stated values of n = 20 and p = 3/5. Round answer to the nearest tenth. | 12.0

| 1.60

The range of the random variable X is {1, 2, 3, 6, u}, where u is unknown. If each value is equally likely and the mean of X is 10, determine the value of u. | 38

Assume that a procedure yields a binomial distribution with a trial repeated 64 times. Use the binomial probability formula to find the probability of 3 successes given the probability 0.04 of success on a single trial. | 0.221

The age (in years) of randomly chosen T-shirts in your wardrobe from last summer is distributed according to the density function with . Find the probability that a randomly chosen T-shirt is between 2 and 8 years old | 0.417

Let X represent the amount of time it takes a student to park in the library parking lot at the university. If we know that the distribution of parking times can be modeled using an exponential distribution with a mean of 4.8 minutes, find the probability that it will take a randomly selected student more than 9 minutes to park in the library lot. | 0.153355

Assume that x has a Poisson probability distribution. Find P(x = 6) when μ = 1.0. | .0005

Suppose that X has a discrete uniform distribution on the integers 2 to 8. Which of the following are true? (i) E(4X) = 20 (ii) σ(X) = 4 | (i) only

Suppose that X is a continuous random variable whose probability density function is given by and for other values of What is the value of C? | 0.375

Find the mean for the binomial distribution which has the values of n = 33 and p = 0.2. Round answer to the nearest tenth. | 6.6

The lifetimes of light bulbs of a particular type are normally distributed with a mean of 420 hours and a standard deviation of 15 hours. What percentage of the bulbs have lifetimes that lie within 2 standard deviations of the mean? | 95%

The probability is 0.85 that a person shopping at a certain store will spend less than $20. For random samples of 82 customers, find the mean number of shoppers who spend less than $20. | 69.7

Find the variance of the following probability distribution. x | 3.57

Suppose X has a Poisson probability distribution with = 9.0. Find μ and σ. | μ = 9.0, σ = 3.0

The owner of a fish market determined that the weights of catfish are normally distributed with the average weight for a catfish is 3.2 pounds with a standard deviation of 0.6 pound. A citation catfish should be one of the top 5% in weight. At what weight (in pounds) should the citation designation be established? | 4.19

Let the random variable X have a discrete uniform distribution on the integers Determine P(X < 6). | 0.5

A new phone system was installed last year to help reduce the expense of personal calls that were being made by employees. Before the new system was installed, the amount being spent on personal calls followed a normal distribution with an average of $1000 per month and a standard deviation of $65 per month. Refer to such expenses as PCE's (personal call expenses). Using the distribution above, what is the probability that a randomly selected month had a PCE of between $875 and $1010? | 0.5339

Suppose the cumulative distribution of the random variable X is Detemine | 0.25

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 3.3 minutes. What proportion of callers is put on hold longer than 2.8 minutes? | 0.42806

According to a college survey, 18% of all students work full time. Find the standard deviation for the random variable X, the number of students who work full time in samples of size 35. | 2.27

The number of calls to an Internet service provider during the hour between 6:00 and 7:00 p.m. is described by a Poisson distribution with mean equal to 15. Given this information, what is the expected number of calls in the first 30 minutes? | 7.5

The on-line access computer service industry is growing at an extraordinary rate. Current estimates suggest that 25% of people with home-based computers have access to on-line services. Suppose that 10 people with home-based computers were randomly and independently sampled. What is the probability that exactly 5 of those sampled have access to on-line services at home? | 0.0584

According to a college survey, 12% of all students work full time. Find the mean for the number of students who work full time in samples of size 54. | 6.48

A basketball player is asked to shot free throws in sets of four. The player shoots 100 sets of 4 free throws. The probability distribution for making a particular number of free throws id given below. Determine the standard deviation for this discrete probability distribution. x | 1.32

The tread life of a particular brand of tire is a random variable best described by a normal distribution with a mean of 61,000 miles and a standard deviation of 2100 miles. What is the probability a certain tire of this brand will last between 60,010 miles and 58,580 miles? | 0.1941

In a recent survey, 80% of the community favored building a police substation in their neighborhood. If 15 citizens are chosen, what is the probability that the number favoring the substation is more than 12? | 0.6482

An automobile service center can take care of 12 cars per hour. If cars arrive at the center randomly and independently at a rate of 8 per hour on average, what is the probability of the service center being totally empty in a given hour? | 0.0003

Suppose that X has a discrete uniform distribution on the integers 2 to 5. Find V(4X). | 20

Suppose the cumulative distribution function of the random variable X is Find the value of P(X>5). | 0.16

Find the probability that in 40 tosses of a fair six-sided die, a five will be obtained at most 11 times. | 0.9739

The systolic blood pressure of 18-year-old women is normally distributed with a mean of 110 mmHg and a standard deviation of 10 mmHg. What percentage of 18-year-old women have a systolic blood pressure that lies within 3 standard deviations of the mean? | 99.7%

A die is rolled 80 times and the number of twos that come up is tallied. If this experiment is repeated many times, find the standard deviation for the random variable X, the number of twos. | 3.33

The accompanying table shows the probability distribution for x, the number that shows up when a loaded die is rolled. Find the variance for the probability distribution. x | 2.41

Let X be a uniform random variable over the interval [1, 9] . What is the probability that the random variable X has a value less than 6? | 0.625

In 2006, the percent of the voting-age population that was registered to vote for the 50 states and the District of Columbia had a mean of 63.5% with a standard deviation of 7.4. Assuming that the distribution is normal, what percentage of states had between 53 and 72 percent of it's voting-age population who were registered to vote? | 0.797

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 4.2 minutes. What proportion of customers having to hold more than 1.8 minutes will hang up before placing an order? | 0.65144

The diameters of ball bearings produced in a manufacturing process can be described using a uniform distribution over the interval 2.55 to 4.75 millimeters. What is the mean diameter of ball bearings produced in this manufacturing process? | 3.65 millimeters

Samples of 10 parts from a metal punching process are selected every hour. Let X denote the number of parts in the sample of 10 that require rework. If the percentage of parts that require rework at 3%, what is the probability that X exceeds 2? | 0.0028

The diameters of bolts produced by a certain machine are normally distributed with a mean of 0.42 inches and a standard deviation of 0.11 inches. What percentage of bolts will have a diameter greater than 0.30 inches? | 86.23%

Suppose the probability density function of the length of computer cables is from 10 to 12 millimeters. Determine the mean and standard deviation of the cable length. | mean = 11 and standard deviation = 0.58

Patients arriving at an outpatient clinic follow an exponential distribution with mean 22 minutes. What is the average number of arrivals per minute? | 0.0455

Find the standard deviation for the probability distribution. x | 0.98

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 14 ounces and a standard deviation of 4.2 ounces. Find the number of ounces above which 98% of the dispensed sodas will fall. | 5.4

According to the 2003 National Survey on Drug Use and Health, 55.3% of males have never used marijuana. Based on this percentage, what is the probability that more than 50 males who have used marijuana for samples of size 120? | 0.9990

A test consists of 10 true/false questions. To pass the test a student must answer at least 4 questions correctly. If a student guesses on each question, what is the probability that the student will pass the test? | 0.8281

A normal distribution has mean μ = 60 and standard deviation σ = 6, find the area under the curve between 58 and 63. | 0.322

The time (in years) until the first critical-part failure for a certain car is exponentially distributed with a mean of 3.5 years. Find the probability that the time until the first critical-part failure is 6 years or more. | 0.180092

The systolic blood pressure of 18-year-old women is normally distributed with a mean of 115 mmHg and a standard deviation of 10 mmHg. What percentage of 18-year-old women have a systolic blood pressure between 96 mmHg and 140 mmHg? | 96.5%

According to a college survey, 15% of all students work full time. Find the mean for the random variable X, the number of students who work full time in samples of size 42. | 6.30

The amount of soda a dispensing machine pours into a 12 ounce can of soda follows a normal distribution with a mean of 12.27 ounces and a standard deviation of 0.18 ounce. The cans only hold 12.51 ounces of soda. Every can that has more than 12.51 ounces of soda poured into it causes a spill and the can needs to go through a special cleaning process before it can be sold. What is the probability a randomly selected can will need to go through this process? | 0.0912

If the probability of a newborn child being female is 0.5, find the probability that in 50 births, 35 or more will be female. | 0.0033

On a multiple choice test with 12 questions, each question has four possible answers, one of which is correct. For students who guess at all answers, find the standard deviation for the random variable X, the number of correct answers. | 1.500

The random variable X represents the number of credit cards that adults have along with the corresponding probabilities. Find the mean and standard deviation. x | mean: 1.62; standard deviation: 0.95

The diameter of ball bearings produced in a manufacturing process can be explained using a uniform distribution over the interval 4.5 to 6.5 millimeters. What is the probability that a randomly selected ball bearing has a diameter greater than 5.85 millimeters? | 0.325

The random variable X represents the number of girls in a family of three children. Assuming that boys and girls are equally likely, find the probability that the number of girls is two or more. | 0.50

The diameters of bolts produced by a certain machine are normally distributed with a mean of 0.34 inches and a standard deviation of 0.01 inches. What percentage of bolts will have a diameter greater than 0.332 inches? | 78.81%

A normal distribution has mean μ = 60 and standard deviation σ = 6, find the area under the curve to the right of 64. | 0.2525

The probability of winning a certain lottery is 1/9999. For people who play 246 times, find the standard deviation for the random variable X, the number of wins. | 0.1568

The time between customer arrivals at a furniture store has an approximate exponential distribution with mean of 9.5 minutes. If a customer just arrived, find the probability that the next customer will not arrive for at least 21 minutes. | 0.109643

Suppose that 14% of people are left handed. If 5 people are selected at random, what is the probability that exactly 2 of them are left handed? | 0.1247

The volumes of soda in quart soda bottles are normally distributed with a mean of 22.3 oz and a standard deviation of 1.6 oz. What is the probability that the volume of soda in a randomly selected bottle will be less than 23.1 oz? | 0.6915

In one region, the September energy consumption levels for single-family homes are normally distributed with a mean of 1155 kWh and a standard deviation of 218 kWh. For a randomly selected home, find the probability that the September energy consumption level is between 1050 kWh and 1225 kWh. | 0.3109

The lengths of human pregnancies are normally distributed with a mean of 269 days and a standard deviation of 16 days. What is the probability that a pregnancy lasts at least 302 days? | 0.0196

A machine pours beer into 16 oz. bottles. Experience has shown that the number of ounces poured is normally distributed with a standard deviation of 1.2 ounces. Find the probabilities that the amount of beer the machine will pour into the next bottle will be between 12.5 and 14.5 ounces. | 0.1039

A machine is set to pump cleanser into a process at the rate of 5 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 4.5 to 7.5 gallons per minute. Find the probability that between 4.8 gallons and 6.2 gallons are pumped during a randomly selected minute. | 0.47

Assume that the weights of quarters are normally distributed with a mean of 5.73 g and a standard deviation 0.071 g. A vending machine will only accept coins weighing between 5.48 g and 5.82 g. What percentage of legal quarters will be rejected? | 89.73%

At one college, GPAs are normally distributed with a mean of 2.4 and a standard deviation of 0.3. What percentage of students at the college have a GPA between 2.1 and 2.9? | 79.4%

A tennis player makes a successful first serve 53% of the time. If she serves 6 times, what is the probability that she gets exactly 3 first serves in? Assume that each serve is independent of the others. | 0.3091

In 2004, the infant mortality rate (per 1,000 live births) for the 50 states and the District of Columbia had a mean of 6.98 and a standard deviation of 1.62. Assuming that the distribution is normal, what percentage of states had an infant mortality rate between 5.6 and 7.1 percent? | 0.3324

The weekly salaries of elementary school teachers in one state are normally distributed with a mean of $595 and a standard deviation of $43. What is the probability that a randomly selected elementary school teacher earns more than $555 a week? | 0.8239

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 13.5 ounces and a standard deviation of 3.5 ounces. Find the probability that between 13 and 14.4 ounces are dispensed in a cup. | 0.1583

A catalog company that receives the majority of its orders by telephone conducted a study to determine how long customers were willing to wait on hold before ordering a product. The length of time was found to be a random variable best approximated by an exponential distribution with a mean equal to 6.5 minutes. What is the probability that a randomly selected caller is placed on hold fewer than 7.5 minutes? | 0.684579

What is the standard deviation of the following probability distribution? x | 1.54

The number of customers that arrive at a fast-food business during a one-hour period is known to be Poisson distributed with a mean equal to 8.60. What is the probability that exactly 8 customers will arrive in a one-hour period? | 0.1366

Assume that a procedure yields a binomial distribution with a trial repeated 12 times. Use the binomial probability formula to find the probability of 5 successes given the probability 0.25 of success on a single trial. | 0.103

Let X be a uniform random variable over the interval [0.1, 5] . What is the probability that the random variable X has a value less than 2.1? | 0.408

The number of ounces of soda that a vending machine dispenses per cup is normally distributed with a mean of 13 ounces and a standard deviation of 2.5 ounces. Find the probability that more than 14.8 ounces is dispensed in a cup. | 0.2358

A machine is set to pump cleanser into a process at the rate of 10 gallons per minute. Upon inspection, it is learned that the machine actually pumps cleanser at a rate described by the uniform distribution over the interval 9.75 to 11.25 gallons per minute. What is the probability that at the time the machine is checked it is pumping more than 10.65 gallons per minute? | 0.40

The thickness measurements of a coating process are uniform distributed with values 0.1, 0.14, 0.18, 0.16. Determine the standard deviation of the coating thickness for this process. | 0.03

In one city, the probability that a person will pass his or her driving test on the first attempt is 0.59. 23 people are selected at random from among those taking their driving test for the first time. What is the probability that among these 23 people, the number passing the test is between 15 and 18 inclusive? | 0.3362

The lifetimes of light bulbs of a particular type are normally distributed with a mean of 362 hours and a standard deviation of 7 hours. What percentage of the bulbs have lifetimes that lie within 1 standard deviation of the mean? | 68%

The probability that a house in an urban area will be burglarized is 15%. If 30 houses are randomly selected, what is the mean of the number of houses burglarized? | 4.5

The owner of a fish market has an assistant who has determined that the weights of catfish are normally distributed, with mean of 3.5 pounds and standard deviation of 0.7 pound. If a sample of 64 fish is randomly selected, what is probability that the sample mean is more than 3.7 pounds? | 0.0111

Each year advertisers spend billions of dollars purchasing commercial time on network television. In the first 6 months of one year, advertisers spent $1.1 billion. In a recent article, the top 10 leading spenders and how much each spent (in million of dollars) were listed: Company A: $73.7 Company F: $26.7 Company B: $63.9 Company G: $26.4 Company C: $57.9 Company H: $22.8 Company D: $57.1 Company I: $21.1 Company E: $32 Company J: $19.8 Calculate the sample variance. | 422.940

The amount of gasoline purchased per car at a large service station is normally distributed with the mean of $47 and a standard deviation of $5. A random sample of 47 is selected, describe the sampling distribution for the sample mean. | Normal with a mean of $47 and a standard deviation of $0.73

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 26 minutes and a standard deviation of 3 minutes. A random sample of 30 cars is selected. So, 90% of the sample means will be greater than what value? | 28.5 minutes

An electrical firm manufactures a certain type of light bulb that has a mean light of 1,900 hours and a standard deviation of 200 hours. Find the probability that a random sample of 100 bulbs will have an average life of not more than 1,975 hours and not less than 1,860 hours. | 0.9772

The data below represent the amount of grams of carbohydrates in a serving of breakfast cereal in a sample of 11 different servings. 11 15 23 29 19 22 21 20 15 25 17 What is the value of IQR? | 8

A study of the amount of time it take a mechanic to rebuild the transmission for a 1992 Chevrolet Cavalier shows that the mean is 8.5 hours and the standard deviation is 1.7 hours. If 64 mechanics are randomly selected, find the probability that their mean rebuild time exceeds 9 hours. | 0.0093

Suppose that and =15 for a population. In a sample where n = 100 is randomly taken, what is the variance for the sample mean? | 0.15

Assume that blood pressure readings are normally distributed with a mean of 122 and a standard deviation of 6.1. If 64 people are randomly selected, find the probability that their mean blood pressure will be less than 123. | 0.9052

A stem-and-leaf diagram for a set of examination scores is given below. Find sample median of these data. Stem | 55.5

Find the mean of the data summarized in the given frequency distribution. Daily Low Temperature (F) | 53.4

A study of the amount of time it take a mechanic to rebuild the transmission for a 1992 Chevrolet Cavalier shows that the mean is 8.4 hours and the standard deviation is 1.8 hours. If 49 mechanics are randomly selected, find the probability that their mean rebuild time exceeds 8.5 hours. | 0.3487

Find the variance of the given data. Round your answer to one more decimals than the original data. 5.0, 8.0, 4.9, 6.8 and 2.8 | 3.96

Sampling distributions describe the distribution of | statistics.

Construct the stem-and-leaf diagram for the below data. 16.9; 15.2; 17.5; 15.5; 16.8; 16.8; 17.1; 17.5; 15.3. | Stem Leaf 15 235 16 889 17 155

Elaine gets quiz grades of 67, 64, and 87. She gets a 84 on her final exam. Find the mean grade if the quizzes each count for 15% and final exam counts for 55% of the final grade. | 78.9

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 48 minutes and a standard deviation of 10 minutes. A random sample of 36 cars is selected. What is the probability that the sample mean will be between 39 and 48 minutes? | 0.500

Fred, a local mechanic, gathered the following data regarding the price, in dollars, of an oil and filterchande at twelve competing service stations: 32.95 24.95 26.95 28.95 18.95 28.95 30.95 22.95 24.95 26.95 29.95 28.95 Compute the range of data. | 14

The amount of bleach a machine pours into bottles has a mean of 28 oz. with a standard deviation of 1.05 oz. Suppose we take a random sample of 25 bottles filled by this machine. What is the standard deviation for the sample mean? | 0.21

The time for a worker to assemble a component is normally distributed with mean 15 minutes and variance 4. Denote the mean assembly times of 16 day-shift workers and 9 night-shift workers by and , respectively. Assume that the assembly times of the workers are mutually independent. Compute P( - < -1.5) is | 0.0359

The weights of the fish in a certain lake are normally distributed with a mean of 15 lb and a standard deviation of 5. If 4 fish are randomly selected, what is the probability that the mean weight will be between 12.6 and 18 lb. | 0.7164

The test scores of 32 students are listed below. Find Q3. 32 37 41 44 46 48 53 55 56 57 59 63 65 66 68 69 70 71 74 74 75 77 78 79 80 82 83 86 89 92 95 99 | 79.5

Let denote the sample mean of a random sample of size n1 = 16 taken from a normal distribution N(212, 36), and let denote the sample mean of a random sample of size n2 = 25 taken from a different normal distribution N(212, 9). Compute | 0.001

An electrical firm manufactures a certain type of light bulb that has a mean light of 1,850 hours and a standard deviation of 190 hours. Find the probability that a random sample of 100 bulbs will have an average life of more than 1,870 hours. | 0.1463

Assume that the heights of men are normally distributed with a mean of 69.8 inches and a standard deviation of 2.4 inches. If 36 men are randomly selected, find the probability that they have a mean height greater than 70.8 inches. | 0.0062

To determine the difference , if any, between two brands of radial tires, 12 tires of each brand are tested. Assume that the lifetimes of both brands of tires come from the same normal distribution N(102000, 33002). The distribution of the difference of the sample mean | normal with mean 0 and standard deviation 1347.22

The average score of all golfers for a particular course has a mean of 80 and a standard deviation of 3. Suppose 100 golfers played the course today. Find the probability that the average score of the 100 golfers exceeded 80.5. | 0.0478

The scores for a statistics test are as follows: Compute the mean score. | 73.90

Use the given sample data to find three quartiles: 15, 21, 3, 6, 10, 28, 36, 1 | 4.5, 12.5, 24.5

Ten cartons of fragile ceramic castings were shipped on each of two air freight carries. On delivery at their destination the cartons were opened and inspected. The number of damaged items per carton were as follows: 17, 20, 1, 18, 5, 14, 18, 10, 6, 2. Assume that you are finding the frequency distribution using groupings: 1-4 inclusively, 5-8 inclusively, 9-12 inclusively and so on.What is the frequency of the interval 5-8? | 2

For women aged 18-24, systolic blood pressures ( in mm Hg) are normally distributed with a mean of 115 and a standard deviation of 13. If 25 women aged 18-24 are randomly selected, find the probability that their mean systolic blood pressures is between 119 and 122. | 0.0584

The mean of a data set is 36.71, and the sample standard deviation s is 3.22. Find the interval representing measurements within one standard deviation of the mean. | (33.49, 39.93)

Use the given sample data to find Q1. 55, 52, 52, 52, 49, 74, 67, 55. | 52.0

A population of Australian Koala bears has a mean height of 21 inches and a standard deviation of 4.5 inches. You plan to choose a sample of 64 bears at random. What is the probability of a sample mean between 21 and 22. | 0.4623

The amount of bleach a machine pours into bottles has a mean of 24 oz. with a standard deviation of 1.5 oz. Suppose we take a random sample of 44 bottles filled by this machine. So, 85% of the sample means will be greater than what value? | 23.77

The amount of corn chips dispensed into a 20-ounce bag by the dispensing machine has been identified at possessing a normal distribution with a mean of 20.5 ounces and a standard deviation of 0.5-ounce. Suppose 100 bags of chips were randomly selected from this dispensing machine. Find the probability that the sample mean weight of these 100 bags exceeded 20.55 ounces. | 0.1587

For the sample below, find the number of observations that are within 1.5 standard deviations of the mean, i.e. the number of observations lie the interval (μ - 1.5σ; μ + 1.5σ). 2, 3, 5, 5, 6, 3, 6, 5, 6, 9, 2, 5, 3, 5, 6, 3, 5, 6, 6, 9. | 16

The time for a worker to assemble a component is normally distributed with mean 15 minutes and variance 4. Denote the mean assembly times of 16 day-shift workers and 9 night-shift workers by and , respectively. Assume that the assembly times of the workers are mutually independent. The distribution of - is | normal with mean 0 and standard deviation 5/6.

A sociologist recently conducted a survey of senior citizens who have net worths too high to qualify for Medicaid but have no private health insurance. The ages of the 25 uninsured senior citizens were as follows: Find the median of the observations. | 74

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 46 minutes and a standard deviation of 11 minutes. A random sample of 25 cars is selected. What is the probability that the sample mean is between 43 and 52 minutes? | 0.9105

For sample sizes greater than 50, the sampling distribution of the mean will be approximately normally distributed | regardless of the shape of the population.

The mean diameter of marbles manufactured at a particular toy factory is 0.850 cm with a standard deviation of 0.010cm. What is the probability of selecting a random sample of 64 marbles that has a mean diameter greater than 0.852 cm? | 0.0548

During one recent year, U.S. consumers redeemed 6.79 billion manufacturers' coupons and saved themselves $2.52 billion. Calculate and interpret the mean savings per coupon. | The average savings was $0.37 per coupon.

The amount of time required for an oil and filter change on an automobile is normally distributed with a mean of 30 minutes and a standard deviation of 6 minutes. A random sample of 25 cars is selected. So, 90% of the sample means will be greater than what value? | 28.5 minutes

The lengths of pregnancies are normally distributed with a mean of 269 days and a standard deviation of 25 days. If 64 women are randomly selected, find the probability that they have a mean pregnancy between 268 days and 271 days. | 0.3644

At a computer manufacturing company, the actual size of computer chips is normally distributed with a mean of 0.95 centimeter and a standard deviation of 0.02 centimeter. A random sample of 4 computer chips is taken. What is the variance for the sample mean? | 0.0001

Let denote the sample mean of a random sample of size n1 = 16 taken from a normal distribution N(125, 36), and let denote the sample mean of a random sample of size n2 = 25 taken from a different normal distribution N(125, 9). The distribution of is | normal with mean 0 and standard deviation 1.6155

Use the given sample data to find three quartiles: 5, 21, 13, 16, 11, 28, 36, 13, 22 | 12, 16, 25

Sales prices of baseball cards from the 1980s are known to possess a normal distribution with a mean sale price of $5.25 and a standard deviation of $2.80. Suppose a random sample of 64 cards from the 1980s is selected. Describe the sampling distribution for the sample mean sale price of the selected cards. | Normal with a mean of $5.25 and a standard deviation of $0.35

To determine the difference , if any, between two brands of radial tires, 12 tires of each brand are tested. Assume that the lifetimes of both brands of tires come from the same normal distribution N(12500, 33002). Compute | 0.0314

Calculate the range of the following data set: 7, 8, 4, 1, 4, 15, 5, 8, 5 | 14

If the amount of gasoline purchased per car at a large service station has a population mean of $34 and a population standard deviation of $2 and a random sample of 100 cars is selected, find the value of the standard deviation of the sample mean. | 0.2

Find the mode(s) for the given sample data 11, 13, 11, 23, 22, 24, 56, 22, 72, 15, 27 | 11 and 22

A data processing firm sampled 75 small businesses to find the number of days their computer systems were down during the previous three months. The distribution of responses is given below. Find the sample mean. Days of down time | 2.2

Health care issues are receiving much attention in both academic and political arenas. A sociologist recently conducted a survey of citizens over 60 years of age whose net worth is too high to qualify for Medicaid and have no private health insurance. The ages of 25 uninsured senior citizens were as follows: 60 61 62 63 64 65 66 68 68 69 70 73 73 74 75 76 76 81 81 82 86 87 89 90 92 Identify the first quartile of the ages of the uninsured senior citizens. | 65.5

A study of the checkout times of 100 customers at a supermarket resulted in the distribution below. Find the mean and standard deviation. x (minutes) | 3.3 and 1.4599

Sample variance is | a statistic.

One year, professional sports players salaries averaged $1.55 million with a standard deviation of $0.75 million. Suppose a sample of 100 major league players was taken. Find the approximate probability that the average salary of the 100 players exceeded $1.45 million. | 0.9088

The top speeds for a sample of five new automobiles are listed below. Calculate the standard deviation of the speeds. 105, 145, 190, 140, 175 | 33.05

The amount of bleach a machine pours into bottles has a mean of 36 oz. with a standard deviation of 0.55 oz. Suppose we take a random sample of 56 bottles filled by this machine. So, 75% of the sample means will be less than what value? | 36.05

The Graduate Record Examination (GRE) is a test required for admission to many U.S. graduate schools. Students’ scores on the verbal reasoning portion of the GRE follow a normal distribution with a standard deviation of 108. Suppose a random sample of 21 students took the test, and the standard deviation of their scores is 115. What is the test statistic for the test H1: σ ≠ 108. | 22.68

The FPT university claims that 20% of its graduates are women. In a graduating class of 250 students, 60 were women. At = 0.05, does this suggest that the school is believable? Let z0.025 = 1.96 and z0.05 = 1.65. | Yes, because | z0 | = 1.58 < z0.025

A cereal company claims that the mean weight of the cereal in its packets is at least 14.4 oz. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: μ = 14.4 H1: μ >14.4

The waiting times (in minutes) of customers at the TienPhong Bank, where customers enter a single waiting line that feeds three teller windows, are normally distributed. A random sample of 6 has mean of 7.07 and standard deviation of 0.53. Construct a 94% upper confidence bound for the population standard deviation. Let and | 1.06

In order to fairly set flat rates for auto mechanics, a shop foreman needs to estimate the average time it takes to replace a fuel pump in a car. How large a sample must he select if he wants to be 99% confident that the true average time is within 8 minutes of the sample average? Assume the standard deviation of all times is 21 minutes. Let z0.005 = 2.58. | 46

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.09 for a two-tailed test. | ±1.695

A confidence interval was used to estimate the proportion of statistics students that are female. A random sample of 100 statistics students generated the following 99% confidence interval: (0.438, 0.642). Using the information above, what total size sample would be necessary if we wanted to estimate the true proportion to within 0.04 using 95% confidence? | 597

A random sample of 42 students has a mean annual earnings of $1200 and a population standard deviation of $230. Construct a 95% confidence interval for the population mean, μ. | ($1130, $1270)

A university dean is interested in determining the proportion of students who receive some sort of financial aid. Rather than examine the records for all students, the dean randomly selects 200 students and finds that 118 of them are receiving financial aid. Use a 95% confidence interval to estimate the true proportion of students on financial aid. | (0.522, 0.658)

Construct a 90% confidence interval for the population mean, μ. Assume the population has a normal distribution. In a recent study of 22 eighth graders, the mean number of hours per week that they watched television was 20.5 with a standard deviation of 4.6 hours. | (18.81, 22.19)

A skeptical paranormal researcher claims that the proportion of Americans that have seen a UFO, p, is less than 20 in every one thousand. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p = 0.02 H1: p <0.02

Find the test statistic t0 for a sample with n = 10, = 7.9, s = 1.3, and ifH1:µ > 8.0. Round your answer to three decimal places. | -0.243

Find the critical value or values of based on the given information. H1: σ > 4.5 n = 19 = 0.05 | 28.869

The claim is that the proportion of drowning deaths of children attributable to beaches is more than 0.25, and the sample statistics include n= 690 drowning deaths of children with 35% of them attributable to beaches. Find the value of the test statistic z using . | 6.07

A cereal company claims that the mean weight of the cereal in its packets isdifferent from 14 oz. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the mean weight is 14 oz. when it really is 14 oz.

The world’s smallest mammal is the bumblebee bat. Such bats are roughly the size of a large bumblebee. A sample of the weights for 5 randomly selected bats has standard deviation of 0.33. Assume that the weights of the bats are normally distributed. Construct a 98% lower confidence bound for the standard deviation of weights for all such bats. Let and | 0.193

The standard IQ test has a mean of 106 and a standard deviation of 12. We want to be 90% certain that we are within 4 IQ points of the true mean. Determine the required sample size. | 25

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.01 for a left-tailed test (H1:µ <µ0). | -2.32

A researcher wishes to estimate the number of households with two cars. How large a sample is needed in order to be 98% confident that the sample proportion will not differ from the true proportion by more than 6%? A previous study indicates that the proportion of households with two cars is 25%. | 283

It is desired to estimate the average total compensation of CEOs. Data were randomly collected from 32 CEOs and the 95% confidence interval was calculated to be ($3 212 540, $6 020 240). Which of the following interpretations is correct? | We are 95% confident that the average total compensation of all CEOs falls in the interval $3 212 540 to $6 020 240.

The width of a confidence interval estimate for a proportion will be | narrower for 90% confidence than for 99% confidence.

Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 28 randomly selected students has a mean test score of 82.5 with a standard deviation of 9.2. | (78.93, 86.07)

The principal of a middle school claims that test scores of the seventh-graders at his school varydifferent fromthe test scores of seventh-graders at a neighboring school, which have variation described by σ = 24.1. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the standard deviation is 24.1 when it really is 24.1.

Determine whether the hypothesis test involves a sampling distribution of means that is a normal distribution, Student t distribution, or neither. Claim: μ = 78. Sample data: n = 24, s = 15.3. The sample data appear to come from a population that is normally distributedand σ is unknown. | Student t

The Graduate Record Examination (GRE) is a test required for admission to many U.S. graduate schools. Students’ scores on the verbal reasoning portion of the GRE follow a normal distribution with a standard deviation of 120. Suppose a random sample of 10 students took the test, and the standard deviation of their scores is 97.2. What is the test statistic for the test H1: σ ≠120. | 5.90

A telephone company claims that 25% of its customers have at least two telephone lines. The company selects a random sample of 500 customers and finds that 108 have two or more telephone lines. At = 0.05, compute the value of the test statistic to test the company's claim. | -1.76

In order to set rates, an insurance company is trying to estimate the number of sick days that full time workers at an auto repair shop take per year. A previous study indicated that the standard deviation was 3.2 days. How large a sample must be selected if the company wants to be 95% confident that the true mean differs from the sample mean by no more than 2 day? Let z0.05 = 1.96. | 10

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.01 for a two-tailed test. | ±2.575

A regional hardware chain is interested in estimating the proportion of their customers who own their own homes. There is some evidence to suggest that the proportion might be around 0.825. Given this, what sample size is required if they wish a 94 percent confidence level with a error of ± 0.025? | About 817

A survey of 200 homeless persons showed that 35 were veterans. Construct a 90% confidence interval for the proportion of homeless persons who are veterans. Let z0.05 = 1.65. | (0.13, 0.22)

A random sample of 10 parking meters in a beach community showed the following incomes for a day. Assume the incomes are normally distributed. $6.30 $6.75 $4.25 $3.60 $4.50 $2.80 $8.00 $3.00 $2.60 $5.20 Find the 95% confidence interval for the true mean. | ($3.39, $6.01)

A researcher claims that the amounts of acetaminophen in a certain brand of cold tablets have a standard deviation different from the σ = 7.3 mg claimed by the manufacturer. Express the null hypothesis H 0 and the alternative hypothesis H 1 in symbolic form. | H0: σ =7.3 mg H1: σ ≠ 7.3 mg

A new apparatus has been devised to replace the needle in administering vaccines. The apparatus, which is connected to a large supply of vaccine, can be set to inject different amounts of the serum, but the variance in the amount of serum injected to a given person must not be greater than 0.05 to ensure proper inoculation. A random sample of 25 injections resulted in a variance of 0.118. What is a test statistic for the test H1: σ> 0.05. | 56.64

A recent study claimed that at least 17% of junior high students are overweight. In a sample of 175 students, 28 were found to be overweight. At = 0.01, determine the value of the test statistic to test the claim. | -0.35

The owner of a football team claims that the average attendance at games is over 67,000, and he is therefore justified in moving the team to a city with a larger stadium. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the mean attendance is at most 67,000, when it really is at most 67,000.

We consider salaries of 45 college graduates who took a statistics course in college. Based on these data we have a sample variance of $25,150. Find 99% upper confidence bound for σ2. Let and | 44,000

A manager wishes to estimate the proportion of parts in his inventory that are in proper working order. However, the sample size that he has been informed he will need exceeds his budget. Which of the following steps might he take to reduce the required sample size? | None of the others.

An economist is interested in studying the incomes of consumers in a particular region. The population standard deviation is known to be $1000. A random sample of 59 individuals resulted in an average income of $21000. What is the width of the 90% confidence interval? | $428.32

A local bank needs information concerning the checking account balances of its customers. A random sample of 18 accounts was checked. The mean balance was $600.70 with a standard deviation of $196.20. Find a 98% confidence interval for the true mean. Assume that the account balances are normally distributed. | ($481.85, $719.55)

The owner of a football team claims that the average attendance at games is over 79,000, and he is therefore justified in moving the team to a city with a larger stadium. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: μ, the average attendance at games, is equal to 79,000 H1: μ, the average attendance at games, is greater than 79,000

You wish to test the claim that μ = 1200 at a level of significance of α = 0.01 andsample statistics are given n = 37, s =80, . Compute the value of the test statistic. Round your answer to two decimal places. | 0.53

You wish to test the claim that μ > 6 at a level of significance of α = 0.05. Let sample statistics be n = 60, s = 1.4. Compute the value of the test statistic. Round your answer to two decimal places. | 1.66

The State Transportation Department is interested in estimating the proportion of vehicle owners that are operating vehicles without the required liability insurance. If they wish to estimate the population proportion within ± 0.08 and use 96 percent confidence, what is the largest random sample that they will need? | About 165

The grade point averages for 10 randomly selected high school students are listed below and has mean of 2.54 and standard deviation of 1.11. 2.9 0.9 4.0 3.6 0.8 2.0 3.2 1.8 3.3 2.9 Assume the grade point averages are normally distributed. Find a 98% confidence interval for the true mean. | (1.55, 3.53)

You wish to test the claim that μ ≠ 17 at a level of significance of α = 0.05 and sample statistics are given n = 36, s = 2.5, . Compute the value of the test statistic. Round your answer to two decimal places. | -2.16

Find the critical value or values of based on the given information. H0: σ = 8.0/ H1: σ ≠ 8.0 n = 10 α = 0.1 | 16.92 and 3.33

A recent study claimed that at least 15% of junior high students are overweight. In a sample of 175 students, 28 were found to be overweight. At = 0.03, determine the critical values to test the claim. | 1.88

Assume that the data has a normal distribution and the number of observations is greater than fifty. Find the critical z value used to test a null hypothesis. α = 0.07 for a test H1: µ0. | 1.476

The fraction of defective integrated circuits produced in a photolithography process is being studied. A random sample of 200 circuits is tested, revealing 8 defectives. Find a 95% two-sided confidence interval on the fraction of defective circuits produced by this particular tool. | (0.013, 0.067)

A random sample of 15 students has a grade point average of 2.86 with a standard deviation of 0.78. Construct the confidence interval for the population mean at a significant level of 10% . Assume the population has a normal distribution. | (2.51, 3.21)

The principal of a middle school claims that test scores of the seventh-graders at her school vary less than the test scores of seventh-graders at a neighboring school, which have variation described by σ = 17.4. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: σ = 17.4 H1: σ < 17.4

Determine whether the given conditions justify testing a claim about a population mean μ. If so, what is formula for test statistic? The sample size is n = 17, σ is not known, and the original population is normally distributed. | Yes, test statistic =

The quality control manager for a filling operation in a bottling plant is concerned with the variability in the volume of milk dispensed into gallon jugs. The filling process results in jugs whose volumes are normally distributed with a mean of 1.02 gallons. The process standard deviation should be less than 0.004 gallons. A sample of 35 jugs was selected and the sample standard deviation was determined to be 0.0036 gallons. What is the value of test statistic for the test H1: < 0.004 | 27.54

Assume that the heights of men are normally distributed. A random sample of 19 men have a mean height of 65.5 inches and a standard deviation of 3.0 inches. Construct a 99% confidence interval for the population standard deviation, | (2.1, 5.1)

A university is interested in estimating the mean time that students spend at the student recreation center per week. A previous study indicated that the standard deviation in time is about 30 minutes per week. If the officials wish to estimate the mean time within 8 minutes with a 90 percent confidence, what should the sample size be? | 39

A private opinion poll is conducted for a politician to determine what proportion of the population favors decriminalizing marijuana possession. How large a sample is needed in order to be 97% confident that the sample proportion will not differ from the true proportion by more than 7%? | 241

In a sample of 25 randomly selected women, it was found that their mean height was 65.2 inches. From previous studies, it is assumed that the standard deviation, is 2.4. Construct the 95% confidence interval for the population mean. | (64.3, 66.1)

Determine the critical values to test the claim about the population proportion p ≠ 0.325 given n = 42 and Use . | 2.575 and -2.575

The world’s smallest mammal is the bumblebee bat. Such bats are roughly the size of a large bumblebee. A sample of the weights for 5 randomly selected bats has standard deviation of 0.33. Assume that the weights of the bats are normally distributed. Construct a 98% confidence interval of the standard deviation of weights for all such bats. Let and | (0.18; 1.21)

If a manager believes that the required sample size is too large for a situation in which she desires to estimate the mean income of blue collar workers in a state, which of the following would lead to a reduction in sample size? | All of the above.

Suppose that an internal report submitted to the managers at a bank in Boston showed that with 95% confidence, the proportion of the bank's customers who also have accounts at one or more other banks is between 0.40 and 0.46. Given this information, what sample size was used to arrive at this estimate? | Approximately 1,066

Many people think that a national lobby's successful fight against gun control legislation is reflecting the will of a minority of Americans. A random sample of 4000 citizens yielded 2250 who are in favor of gun control legislation. Estimate the true proportion of all Americans who are in favor of gun control legislation using a 90% confidence interval. | (0.5496, 0.5754)

Find the test statistic t0 for a sample with n = 20, = 7.5, s = 1.9, and if H1: μ < 8.3. Round your answer to three decimal places. | -1.883

Determine the test statistic to test the claim about the population proportion p > 0.51 given n = 50 and Use | None of the other choices is true

A researcher claims that the amounts of acetaminophen in a certain brand of cold tablets have a standard deviationless thanthe σ = 7.3 mg claimed by the manufacturer. Assume that a hypothesis test of the given claim will be conducted. Identify the type II error for the test. | The error of failing to reject the claim that the standard deviation is at least 7.3 mg when it is actually less than 7.3 mg.

A researcher at a major hospital wishes to estimate the proportion of the adult population of the United States that has high blood pressure. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proportion by more than 5%? | 385

In a random sample of 120 computers, the mean repair cost was $55 with a population standard deviation of $12. Construct a 99% confidence interval for the population mean. | ($52, $58)

Carter Motor Company claims that its new sedan, the Libra, will average better than 27 miles per gallon in the city. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the mean is at most 27 miles per gallon when it really is at most 27 miles per gallon.

Find the test statistic t0 for a sample with n = 27, = 21, s = 3.3, and α = 0.005 if H1: μ > 20. Round your answer to three decimal places. | 1.575

Find the critical value or values of based on the given information. H1: σ < 26.1 n = 29 = 0.01 | 13.565

The mean replacement time for a random sample of 21 microwave ovens is 8.6 years with a standard deviation of 2.7 years. Construct the 98% confidence interval for the population variance, Assume the data are normally distributed | (3.9, 17.7)

Suppose you want to test the claim that μ > 28.6. Given a sample size of n = 62 and a level of significance of . When should you reject H0? | Reject H0 if the test statistic is greater than 2.05

Many people think that a national lobby's successful fight against gun control legislation is reflecting the will of a minority of Americans. A previous random sample of 4000 citizens yielded 2500 who are in favor of gun control legislation. How many citizens would need to be sampled if a 94% confidence interval was desired to estimate the true proportion to within 5%? | 332

A 99% confidence interval estimate can be interpreted to mean that (i) if all possible samples are taken and confidence interval estimates are developed, 99% of them would include the true population mean somewhere within their interval. (ii) we have 99% confidence that we have selected a sample whose interval does include the population mean. | Both of (i) and (ii)

A psychologist claims that more than13 percent of the population suffers from professional problems due to extreme shyness. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the true proportion is at most 13 percent when it is actually at most 13 percent.

Determine whether the hypothesis test involves a sampling distribution of means that is a normal distribution, Student t distribution, or neither. Claim: μ = 959. Sample data: n = 25, s = 25. The sample data appear to come from a normally distributed population with σ unknown. | Student t

The owner of a football team claims that the average attendance at games is over 727, and he is therefore justified in moving the team to a city with a larger stadium. Assuming that a hypothesis test of the claim has been conducted and that the conclusion isrejecting the null hypothesis, state the conclusion in nontechnical terms. | There is sufficient evidence to support the claim that the mean attendance is greater than than 727.

A manufacturer of golf equipment wishes to estimate the number of left-handed golfers. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proportion by more than 2%? A previous study indicates that the proportion of left-handed golfers is 15%. | 1225

A claim is made that the proportion of children who play sports is less than 0.5, and the sample statistics include n =1200 subjects with 40% saying that they play a sport. Find the value of the test statistic z using | -6.928

In order to efficiently bid on a contract, a contractor wants to be 99% confident that his error is less than two hours in estimating the average time it takes to install tile flooring. Previous contracts indicate that the standard deviation is 5 hours. How large a sample must be selected? Let z0.005 = 2.58. | 42

Determine whether the given conditions justify testing a claim about a population mean μ. If so, what is formula for test statistic? The sample size is n = 25,σ = 5.93, and the original population is normally distributed. | Yes, test statistic =

If you were constructing a 99% confidence interval of the population mean based on a sample of n = 12 where the standard deviation of the sample s = 3.25, the critical value of t will be | 3.1058

An article a Florida newspaper reported on the topics that teenagers most want to discuss with their parents. The findings, the results of a poll, showed that 46% would like more discussion about the family's financial situation, 37% would like to talk about school, and 30% would like to talk about religion. These and other percentages were based on a national sampling of 549 teenagers. Estimate the proportion of all teenagers who want more family discussions about school. Use a 99% confidence level. | (0.318, 0.422)

Construct a 99% confidence interval for the population mean, μ. Assume the population has a normal distribution. A group of 29 randomly selected students has a mean age of 20.4 years with a standard deviation of 3.5 years. | (18.6, 22.2)

The manufacturer of a refrigerator system for beer kegs produces refrigerators that are supposed to maintain a true mean temperature, μ, of 45°F, ideal for a certain type of German pilsner. The owner of the brewery does not agree with the refrigerator manufacturer, and claims he can prove that the true mean temperature is incorrect. Assume that a hypothesis test of the given claim will be conducted. Identify the type II error for the test. | The error of failing to reject the claim that the mean temperature equals 45°F when it is really different from 45°F.

Determine whether the given conditions justify testing a claim about a population mean μ. If so, what is formula for test statistic? The sample size is n = 49, σ = 12.3, s = 8.72and the original population is not normally distributed. | Yes, test statistic =

Carter Motor Company claims that its new sedan, the Libra, will average better than 70 miles per gallon in the city. Use μ, the true average mileage of the Libra. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: μ = 70 H1: μ >70

Find the critical value or values of based on the given information. H1: σ > 9.3 n = 18 = 0.05 | 27.587

Assume that the heights of women are normally distributed. A random sample of 35 women have a mean height of 62.5 inches and a standard deviation of 2.8 inches. Construct a 98% confidence interval for the population variance, | (4.8, 15.0)

A local men's clothing store is being sold. The buyers are trying to estimate the percentage of items that are outdated. They will randomly sample among its 100000 items in order to determine the proportion of merchandise that is outdated. The current owners have never determined their outdated percentage and can not help the buyers. Approximately how large a sample do the buyers need in order to insure that they are 94% confident that the error is within 1%? | 8836

Of 900 randomly selected cases of lung cancer, 360 resulted in death within five years. Construct a 95% two-sided confidence interval on the death rate from lung cancer. | (0.37, 0.43)

Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A random sample of 24 fluorescent light bulbs has a mean life of 665 hours with a standard deviation of 24 hours. | (654.9, 675.1)

A manufacturer of electronic calculators is interested in estimating the fraction of defective units produced. A random sample of 1500 calculators contains 15 defectives. Compute a 99% upper-confidence bound on the fraction defective. Let z0.005 = 2.58 and z0.01 =2.33. | p ≤ 0.016

Construct a 96% confidence interval for the population mean, μ. Assume the population has a normal distribution. A study of 31 bowlers showed that their average score was 187 with a standard deviation of 8. | (183.9, 190.1)

Find the test statistic t0 for a sample with n = 15, = 7, s = 0.8, and ifH1: µ < 6.0. Round your answer to three decimal places. | 4.841

Find the critical value or values of based on the given information. H1: σ < 0.629 n = 21 = 0.025 | 9.591

Past experience indicates that the standard deviation in the time it takes for a "fast lube" operation to actually complete the lube and oil change for customers is 3.00 minutes. The manager wishes to estimate the mean time with 99% confidence and a total width of the two-side confidence interval on mean to be 1 minute. Given this, what must the sample size be? | About 239

A psychologist claims that more than 16 percent of the population suffers from professional problems due to extreme shyness. Use p, the true percentage of the population that suffers from extreme shyness. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p =16% H1: p >16%

You wish to test the claim that μ ≤ 38 at a level of significance of α = 0.01 and are given sample statistics n = 43, s =4.7, . Compute the value of the test statistic. Round your answer to two decimal places. | 2.51

A pollster wishes to estimate the proportion of United States voters who favor capital punishment. How large a sample is needed in order to be 98% confident that the sample proportion will not differ from the true proportion by more than 4%? | 849

A random sample of 68 fluorescent light bulbs has a mean life of 600 hours with a population standard deviation of 25 hours. Construct a 95% confidence interval for the population mean. | (594.1, 605.9)

A confidence interval was used to estimate the proportion of statistics students that are females. A random sample of 200 statistics students generated the following 90% confidence interval: (0.48, 0.64). Based on the interval above, is the population proportion of females equal to 0.60? | Maybe. 0.60 is a believable value of the population proportion based on the information above.

Determine whether the hypothesis test involves a sampling distribution of means that is a normal distribution, Student t distribution, or neither. Claim: μ = 119. Sample data: n = 45, s = 15.2. The sample data appear to come from a populationthat is not normally distributedwith unknown μ and | Normal

A sample of the grade point averages for 10 randomly selected students has mean of 6.7 and standard deviation of 1.0. Construct a 90% confidence interval for the population standard deviation, Assume the data are normally distributed. | (0.73, 1.65)

The quality control manager for a filling operation in a bottling plant is concerned with the variability in the volume of milk dispensed into gallon jugs. The filling process results in jugs whose volumes are normally distributed with a mean of 1.02 gallons. The process standard deviation should be less than 0.032 gallons. A sample of 42 jugs was selected and the sample standard deviation was determined to be 0.036 gallons. What is the value of test statistic for the test H1: < 0.032 | 51.89

Suppose a 95% confidence interval for μ turns out to be (1000, 1900). Give a definition of what it means to be "95% confident" in an inference. | In repeated sampling, 95% of the intervals constructed would contain the population mean.

An entomologist writes an article in a scientific journal which claims that fewer than21 infive thousand male fireflies are unable to produce light due to a genetic mutation. Use the parameter p, the true proportion of fireflies unable to produce light. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0: p = 0.0042 H1: p < 0.0042

In a recent study of 49 eighth graders, the mean number of hours per week that they watched television was 18.6 with a population standard deviation of 6.8 hours. Find the 95% confidence interval for the population mean. | (16.7, 20.5)

A Professor at Hanoi Medical University is interested in estimating the birth weight of infants. How large a sample must he select if he desires to be 99% confident that the true mean is within 0.1 kilograms of the sample mean? A past experience indicates that the standard deviation of the birth weights is known to be 0.7 kilograms. Let z0.005 = 2.58. | 327

Suppose you want to test the claim that μ ≠ 3.5. Given a sample size of n = 51 and a level of significance of. When should you reject H0 ? | Reject H0 if the test statistic is greater than 2.33 or less than -2.33

Find the critical value or values of based on the given information. H1: σ < 0.14 n = 25 = 0.10 | 15.66

A researcher claims that 26% of voters favor gun control.Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H0:p = 0.26 H1: p ≠ 0.26

Find the test statistic t0 for a sample with n = 12, = 30.2, s = 2.2, and α = 0.01 if H0 : µ = 28. Round your answer to three decimal places. | 3.464

Compute the critical value that corresponds to a 94% level of confidence. | 1.88

A sample of 28 teachers had mean annual earnings of $3450 with a standard deviation of $600. Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. | ($3218, $3682)

A random sample of 169 students has a grade point average with a mean of 6.6 and with a population standard deviation of 0.8. Construct a 98% confidence interval for the population mean, μ. | (6.46, 6.74)

A nurse at a local hospital is interested in estimating the birth weight of infants. How large a sample must she select if she desires to be 95% confident that the true mean is within 4 ounces of the sample mean? The standard deviation of the birth weights is known to be 7 ounces. | 12

A student randomly selects 22 CDs at a store. The mean is $8.5 with a standard deviation of $1.25. Construct a 95% confidence interval for the population standard deviation, Assume the data are normally distributed. | ($0.96, $1.79)

Construct a 95% confidence interval for the population standard deviation σ of a random sample of 25 men who have a mean weight of 170.4 pounds with a standard deviation of 10.3 pounds. Assume the population is normally distributed. | (8.0, 14.3)

A group of 55 bowlers showed that their average score was 190 with a population standard deviation of 8. Find the 99% confidence interval of the mean score of all bowlers. | (187.2, 192.8)

It is desired to estimate the average total compensation of CEOs in the Service industry. Data were randomly collected from 28 CEOs and the 99% confidence interval was calculated to be ($2,181,260, $5,836,180). Based on the interval above, do you believe the average total compensation of CEOs in the Service industry is less than $3,000,000? | I cannot conclude that the average is less than $3,000,000 at the 99% confidence level.

Find the test statistic t0 for a sample with n = 17, = 17.7, s = 2.4, and if H1: μ ≠ 17.9. Round your answer to three decimal places. | -0.344

An airline claims that the no-show rate for passengers is less than 3%. In a sample of 420 randomly selected reservations, 21 were no-shows. At = 0.01, compute the value of the test statistic to test the airline’s claim. | 2.4

Suppose a 99% confidence interval for population mean turns out to be (1500, 2200). To make more useful inferences from the data, it is desired to reduce the width of the confidence interval. Which of the following will result in a reduced interval width? | Both increase the sample size and decrease the confidence level.

The grade point averages for 11 randomly selected students in a statistics class are listed below. 2.4 3.2 1.8 1.9 2.9 4.0 3.3 0.9 3.6 0.8 2.2 What is the effect on the width of the confidence interval if the sample size is increased to 15? | The width decreases.

Given the size of a human’s brain, x, and their score on an IQ test, y, would you expect a positive correlation, a negative correlation, or no correlation? | no correlation

A random sample of 20 observations was made on the diameter of spot welds and the corresponding weld shear strength. Given that r = 0.65, what is the value of test statistic if we want to test the hypothesis that ρ = 0 at a level of significance of 0.05. Let t0.025,18 = 2.1, t0.05,18 = 1.73 and t0.025,19 = 2.09. | 3.63

Assume that we found out the regression equation = 1.6 +x corresponding to the data below x 0 1 2 4 5 y 1 2 4 5 7 Find the error sum of square SSE. | 0.919

A manager wishes to determine the relationship between the number of miles (in hundreds of miles) the Manager’s sales representatives travel per month and the amount of sales (in thousands of dollars) per month. Miles traveled, x 4 8 10 Sales, y 27 58 61 Calculate the test statistic to test the claim ρ = 0. Round answers to three decimal places. | 3.857

A sample of 8 households was asked about their monthly income (X) and the number of hours they spend connected to the internet each month (Y). The data yield the following statistics: = 324, = 393, = 1720.875, = 1150, = 1090.5. What is the slope of the regression line of hours on income? | 0.6337

The table contains the weights and heights of nine randomly selected adults. Compute the correlation coefficient. | 0.73

Suppose we have the following information from a simple regression: = 117.4, = -17.29, n = 300, = 4.3, SST = 17000, and SSE = 10000. What is the correlation coefficient? | -0.642

The table below shows the sales and profits of a company from 2000 to 2005. Construct a scatter diagram for the data and state whether sales and profits for this company have no correlation, a positive correlation, or a negative correlation for this period. | Positive correlation

A simple regression model has the form: = 10 + 2x. As x increases by one unit, then the value of y will increase by: | 2 units

A random sample of n = 25 observations was made on the time to failure of an electronic component and the temperature in the application environment in which the component was used. Given that = 0.4, = 1.50, se()= 7.68, se()= 12.4. What is the value of the test statistic for testing H0: ? | 0.04

A mail-order firm is interested in estimating the number of order that need to be processed on a given day from the weight of the mail received. A close monitoring of the mail on 4 randomly selected business days produced the results below. Find the equation of the least squares regression line relating the number of orders to the weight of the mail. Mail: x (pounds) 10 12 13 17 Orders: y 8 10 6 10 | = 5.5 + 0.23x

For the data in the table below, what is the value of the test statistic for testing x 15 21 16 30 y 67 80 85 78 | -0.38

A sample of10 households was asked about their monthly income (X) and the number of hours they spend connected to the internet each month (Y). The data yield the following statistics: = 324, = 393, = 15210, = 17150, = 2599. What is the value of the coefficient of determination? | None of the other choices is true

Consider a random sample of 27 observations of two variables X and Y. The following summary statistics are available: Σyi = 57.2,Σxi = 1253.4, = 73296.4, and Σxiyi = 3133.7. What is the y-intercept of the sample regression line? | 0.649

The following table gives the total sales (revenue) and profits for 8 retailers. Construct a scatter diagram for the data and state whether sales and profits for these companies have no correlation, a positive correlation, or a negative correlation. | Positive correlation

Given a sample with r = 0.329, n = 30, and = 0.10, determine the test statistic to test the claim ρ = 0. Round answers to three decimal places | 1.844

In a regression problem the following pairs of (x, y) are given: (-4, 8), (-1, 2), (0, 0), (1, -2) and (4, -8). What does this indicate about the value of coefficient of determination? | It is +1.

Given the supply of a commodity, x, and the price of a commodity, y, would you expect a positive correlation, a negative correlation, or no correlation? | negative correlation

Identify the choice that best completes the statement Given the least squares regression line = 12.31 + 0.03 x: | the relationship between x and y is positive.

Given a sample with r = 0.833, n = 12, and = 0.05, determine the test statistic t0 necessary to test the claim ρ = 0. Round answers to three decimal places. | 4.761

The height y and base diameter x of five tree of a certain variety produced the following data x 1 2 2 5 y 30 40 90 120 Find the equation of the estimated regression line of y on x. | = 21.11x+17.22

The height y and base diameter x of five tree of a certain variety produced the following data x 2 2 3 5 y 30 40 90 100 Compute the correlation coefficient. | 0.873

The table below shows the legal costs and the profits of a company from 2000 to 2005. Construct a scatter diagram for the data and state whether legal costs and profits for this company have no correlation, a positive correlation, or a negative correlation for this period. | Negative correlation

Suppose we have the following information from a simple regression: n = 15, = 301.5, = 385.7, = 1719.8, = 1200.9, = 1090.5. What is the y-intercept of the regression line of hours on income? | 12.97

We can show that, when the null hypothesis H0: ρ = 0 is true and the random variables have a joint normal distribution, then the random variable which is used to test the hypothesis that there is no linear association in the population between a pair of random variables, follows the: | student's t distribution.

Which of the following represents the strongest linear correlation? | -0.97

Suppose that a random sample of 10,000 (X, Y) pairs yielded: = 10.4, se()= 21.2, se()= 2.4. What is the value of the test statistic for testing H0: ? | 0.019

A manufacturing company is interested in predicting the number of defects that will be produced each hour on the assembly line. The managers believe that there is a relationship between the defect rate and the production rate per hour. The managers believe that they can use production rate to predict the number of defects. The following data were collected for 10 randomly selected hours. Based on these sample data, which of the following is the regression equation? | = 5.67 + .048x.

Suppose you are interested in determining the relationship between the temperatures (x) on days during a summer class and the number of absences on those days (y). For a sample of 9 observations, you have the following information: Σxi = 196, Σyi = 131.7, Σxiyi = 2001.4, Σ(xi)2 = 702.3, Σ(yi)2 = 1321.5. Find the sample regression line. | = 9.341 + 0.243x

The data below are the exam scores of 4 randomly selected statistics students, what is the value of the test statistic for testing Mid-term, x 5 6 6 7.4 Final, y 5.2 4.6 7 7 | 0.07

For a sample of 45 observations, you have the following information: Σxi = 153.7, Σyi = 231.2, Σxiyi = 712.5, Σ(xi)2 = 718, Σ(yi)2 = 1775.2. What is the sample correlation coefficient between X and Y? | -0.23

Consider the following pairs of observations: x 2 3 5 5 7 6 y 1.3 1.5 2.2 2.3 2.7 1.9 Find the value of the coefficient of correlation. | 0.897

Given the least squares regression line = -2.88- 1.77x and a coefficient of determination of 0.64, the coefficient of correlation is: | -0.8

For a random sample of 263 professionals, the correlation between their age and their income was found to be 0.17. You are interested in testing the null hypothesis that there is no linear relationship between these two variables against the alternative that there is a positive relationship. What is your conclusion in testing H0: ρ = 0 vs. H1: ρ > 0 at = 0.01? | Reject H0

An actuary wanted to develop a model to predict how long individuals will live. After consulting a number of physicians, he collected the age at death (y), the average number of hours of exercise per week (x). A random sample of 7 individuals was selected and the results are shown below. x 7 8 6 7 12 12 3 y 85 80 75 79 82 79 80 Determine the correlation coefficient. | 0.17

A sample of 8 households was asked about their monthly income (X) and the number of hours they spend connected to the internet each month (Y). The data yield the following statistics: = 324, = 393, = 1720.875, = 1150, = 1090.5. What is the y-intercept of the regression line of hours on income? | 23.46

For several customers at the local bookstore, the scatter diagram compares the weight of their books (y) and the number of pages in them(x) is shown below. State whether there is no correlation, a positive correlation, or a negative correlation between the x and y variables. | Positive correlation

In a simple linear model, testing H0 : = 0 is the same as testing: | H0: β1 = 0

The data below are the gestation periods, in months, of randomly selected animals and their corresponding life spans, in years. Use the regression equation to predict the life span, y, for a gestation period of 6 months, x. Assume the variables x and y have a significant correlation. Gestation, x 8 2.1 3.8 Life span, y 30 12 10 | 21.97

Consider a random sample of 20 observations of two variables X and Y. The following summary statistics are available: Σyi = 12.75,Σxi = 1478, = 143,215.8, and Σxiyi = 1083.67. What is the slope of the sample regression line? | 0.0042

The data below are the ages and systolic blood pressures (measured in millimeters of mercury) of 3 randomly selected adults. Age, x 42 45 49 Pressure, y 118 122 125 Calculate the test statistic to test the claim ρ = 0. Round answers to three decimal places. | 5.913

For a group of English students at the local junior college, the scatter diagram compares the number of incorrect answers on a test they took (y) and the length of the pencil used to take the test (x). State whether there is no correlation, a positive correlation, or a negative correlation between the x and y variables. | No correlation

If the coefficient of correlation is 0.78, what does the coefficient of determination equal? | 0.6084

For a sample of 10 observations, you have the following information: Σxi = 253, Σyi = 172.2, Σxiyi = 643.4, Σ(xi)2 = 696, Σ(yi)2 = 152.2. What is the sample correlation coefficient between X and Y? | -0.93

A sample of 8 households was asked about their monthly income (X) and the number of hours they spend connected to the internet each month (Y). The data yield the following statistics: = 324, = 393, = 1720.875, = 1050, = 1080.5. What is the error sum of squares? | 371.578

Assume that you are predicting Y from X. Which of the following correlation coefficients would yield predictions with the least error? | r = -0.85

Suppose we have the following information from a simple regression: = 107.4, = -14.30, se()= 2.8, se()= 2.4, n = 200. What is the value of the test statistic for testing H0: ? | -5.96

If a sample of n = 40 people is selected and the sample correlation between two variables is r = 0.468, what is the test statistic value for testing whether the true population correlation coefficient is equal to zero? | 3.26

For the data in the table below, find the equation of the regression line of y on x. x 0 1 2 1 y 0 0 1 3 | = 0.5x +0.5

The general manager of a chain of furniture stores believes that experience is the most important factor in determining the level of success of a salesperson. To examine this belief she records last month's sales and the years of experience of 8 randomly selected salespeople. These data are listed below. Years of Experience 0 2 7 4 9 5 5 8 Sales 7 7.7 15 8.5 15 7 8 12 Determine the correlation coefficient. | 0.81

An insurance company analyst is interested in analyzing the dollar value of damage in automobile accidents. She collects data from 115 accidents, and records the amount of damage as well as the age of the driver. The results of her regression analysis are listed below. On average, what would be the dollar value of an accident involving a 30-year-old driver? | $12,824.722

You want to explore the relationship between the grades students receive on their first two exams. For a sample of 17 students, you find a correlation coefficient of 0.47. What is the value of the test statistic for testing H0: ρ = 0 vs. H1: ρ 0 ? | 2.06

You want to explore the relationship between the scores students receive on their first quiz and their first exam. You believe that there is anegative correlation between the two scores. What are the most appropriate null and alternative hypotheses regarding the population correlation? | H0: ρ = 0 and H1: ρ < 0

Assume that you are predicting X from Y. Which of the following correlation coefficients would yield predictions with the most error? | r = 0.14

In a regression problem the following pairs of (x, y) are given: (2, 1), (3,-1), (2, 0), (4,-2) and (4, 2). That indicates that the: | coefficient of correlation is 0.158

The weight and systolic blood pressure of 4 randomly selected males in the age group 25 to 30 are shown in the following table. Assume that weight and blood pressure are jointly normally distributed. Weight, x 50 62 67 55 Pressure, y 90 110 100 90 What is the value of the test statistic for testing | 1.46

Which of the following statements is true regarding the coefficient of correlation? | All of the others

A sample of 8 households was asked about their monthly income (X) and the number of hours they spend connected to the internet each month (Y). The data yield the following statistics: = 324, = 393, = 1820.875, = 1150, = 1080.5. What is the regression sum of squares? | 641.164

Find the value of the linear correlation coefficient r. x 85.3 78.3 80.6 95.8 y 12.2 15.1 19.4 17.4 | 0.07

An indication ofno linear relationship between two variables would be a: | coefficient of correlation of 0

Given the equation of a regression line is = 4x - 6, what is the best predicted value for y given x = 9? Assume that the variables x and y have a significant correlation. | 30

You want to explore the relationship between the grades students receive on their first quiz (X) and their first exam (Y). The first quiz and test scores for a sample of 11 students reveal the following summary statistics: = 330.5, sx = 2.03, and sy = 17.91 What is the sample correlation coefficient? | 0.909

Two separate tests are designed to measure a student's ability to solve problems. Several students are randomly selected to take both tests and the results are shown below. Test 1 7.5 6.4 6.6 5.8 8.3 Test 2 6.7 6.6 7.2 4.0 6.7 Find the value of the linear correlation coefficient r. | 0.58

Suppose we have the following information from a simple regression: = 107.4, = -14.39, se()= 2.8, se()= 2.4, n = 200. What is the value of the test statistic for testing H0: ? | -1.071

A company keeps extensive records on its new salespeople on the premise that sales should increase with experience. A random sample of seven new salespeople produced the data on experience and sales shown in the table. Months on job, x 2 12 5 9 7 Monthly sales, y 2.4 15.0 3.5 11.0 10.5 Find the value of the coefficient of correlation. | 0.96

Recently, an automobile insurance company performed a study of a random sample of 38 of its customers to determine if there is a positive relationship between the number of miles driven and the age of the driver. The sample correlation coefficient is r = 0.59. Given this information, which of the following is appropriate critical value for testing the null hypothesis at an alpha = 0.05 level? | 1.688

In simple linear regression, which of the following statements indicates there is no linear relationship between the variables x and y? | Coefficient of correlation is 0.0.

The height y and base diameter x of five tree of a certain variety produced the following data x 2 4 3 4 y 33 41 96 90 What is the value of the test statistic for testing | 0.026

For a group of students in a statistics class, the scatter diagram compares their test scores (y) and the number of red shirts they have(x) is shown as below. State whether there is no correlation, a positive correlation, or a negative correlation between the x and y variables. | Negative correlation

A regression analysis between sales (in $1000) and advertising (in $) resulted in the following least squares line: = 50,000 + 6x. This implies that: | an increase of $1 in advertising is expected to result in an increase of $6000 in sales.

Suppose that you are interested in the relationship between the return on a stock this year (Y), compared to the return the year before (X). From a sample of 12 firms, you have collected the following information: Σxi = 217, Σyi = 131.7, Σxiyi = 1932.5, Σ(xi)2 = 689, Σ(yi)2 = 1321.5. What is the sample correlation coefficient between X and Y? | -0.76

The data below are the final exam scores of 10 randomly selected statistics students and the number of hours they studied for the exam. Hours,x 3 5 2 8 2 4 4 5 6 3 Scores,y 65 80 60 66 78 85 90 90 71 88 Find the equation of the regression line for the given data. | = -0.24x + 78.31

Suppose you are interested in determining the relationship between the number of absences (x) and the final grades (y) of students from a statistics class. For a sample of 9 observations, you have the following information: Σxi = 217, Σyi = 131.7, Σxiyi = 1932.5, Σ(xi)2 = 689, Σ(yi)2 = 1321.5. Find the sample regression line. | = 8.027 + 0.274x

The table below shows the times (in hours) that seven students spend watching television and using the Internet. Construct a scatter diagram for the data and state whether these times have no correlation, a positive correlation, or a negative correlation. | Positive correlation

If the least squares equation is = 10 + 8X, then the value of8 (the coefficient of x)indicates: | for each unit increase in X, Y increases on average by 8.

The weight and systolic blood pressure of 4 randomly selected males in the age group 25 to 30 are shown in the following table. Assume that weight and blood pressure are jointly normally distributed. Weight, x 50 62 67 55 Pressure, y 90 110 120 90 What is the value of the test statistic for testing | -0.44

The manager of a used-car dealership is very interested in the resale price of used cars. The manager feels that the age of the car is important in determining the resale value. He collects data on the age and resale value of 15 cars and runs a regression analysis with the value of the car (in thousands of dollars) as the dependent variable and the age of the car (in years) as the independent variable. Unfortunately, he spilled his coffee on the printout and lost some of the results. The partial results left are displayed below. Multiple R 0.557 R Square "A" Adjusted R Square 0.133 Standard error "B" Observations 15000 What is the value of "A"? | 0.310

The amount of television viewed by today's youth is of primary concern to Parents Against Watching Television (PAWT). 250 parents of elementary school-aged children were asked to estimate the number of hours per week that their child watches television. Identify the type of data collected by PAWT. | quantitative and discrete

An experiment consists of randomly choosing a number between 1 and 10. Let E be the event that the number chosen is even. List the sample points in | 2, 4, 6, 8, 10

Pick a bit string from the set of all bit strings of length 10. Find the probability of getting a bit string that begins and ends with 0. | 1/4

A pair of dice is thrown twice. What is the probability of getting totals of 7 and 11? | 1/54

Given events E and F with probabilities P(E) = 0.65 and P(F) = 0.19, are E and F mutually exclusive? | cannot be determined

Which of the following is a discrete random variable? | The number of eggs that hens lay in a month

Suppose that 11% of people are left handed. If 6 people are selected at random, what is the probability that exactly 2 of them are left handed? | 0.1139

Product codes of 6, 7, 8 or 9 letters are equally likely. Which of the following statements are true? (i) Standard deviation of the number of letters in one code is 1.19. (ii) The probability of the event that the code has at least 7 letters is 0.5 | (i) only

In a manufacturing process that laminates several ceramic layers, 2% of the assemblies are defective. Assume that the assemblies are independent. What is the mean number of assemblies that need to be checked to obtain five defective assemblies? | 250

Printed circuit cards are placed in a functional test after being populated with semiconductor chips. A lot contains 40 cards, and a sample of 3 are selected at random without replacement for functional testing. If 5 cards are defective, what is the probability that all cards in the sample are defective? | 0.001

(See picture) [file:1968.jpg] | (i)

(See picture) [file:1979.jpg] | 0.61

(See picture) [file:1986.jpg] | 8

A multiple-choice quiz has 20 questions each with 4 possible answers of which only 1 is the correct answer. What is the probability that sheer guesswork yields 4 correct answers for 5 of the 20 problems about which the student has no knowledge? | 0.0146

Suppose that a qualitative variable has three categories with frequencies of occurrence shown in the table. When constructing a pie chart, what is the size of the angle for class A? [file:3558.jpg] | (ii)

[file:3579.jpg] | 598, 600, 602, 604, 605

The heights (in inches) of 20 adult males are listed below. 70 72 71 70 69 73 69 68 70 71 67 71 70 74 69 68 71 71 71 72 Find the range of the data set. | 7

A large retail company gives an employment screening test to all prospective employees. Frankin Gilman recently took the test and it was reported back to him that his score placed him at the 80th percentile. Therefore: | Frankin scored as high or higher than 80 percent of the people who took the test.

The standard error of the population proportion will become larger | as population proportion approaches 0.50.

A random sample of size n = 16 is taken from a normal population with mean 40 and variance 5. The distribution of the sample mean is | normal with mean 40 and variance 5/16.

A normal population has mean 76 and variance 9. How large must be the random sample be if we want the standard error of the sample mean to be 1.1? | 8

Suppose a 95% confidence interval for μ turns out to be (1000, 2100). Give a definition of what it means to be 95% confident in an inference. | In repeated sampling, 95% of the intervals constructed would contain the population mean.

A random sample of 40 students has a mean annual earnings of 3120 and a population standard deviation of 677. Construct the confidence interval for the population mean. Use a 95% confidence level. [file:2187.jpg] | (2910, 3330)

A group of 40 bowlers showed that their average score was 192 with a population standard deviation of 8. Assume that bowler’s scores are normally distributed. Find the 95% confidence interval of the mean score of all bowlers. [file:2195.jpg] | (189.5, 194.5)

(See picture) [file:2212.jpg] | (186.3, 197.7)

Construct a 95% confidence interval for the population standard deviation of a random sample of 15 men who have a mean weight of 165.2 pounds with a standard deviation of 10.3 pounds. Assume the population is normally distributed. [file:2225.jpg] | (7.5, 16.2)

A researcher at a major hospital wishes to estimate the proportion of the adult population of the United States that has high blood pressure. How large a sample is needed in order to be 99% confident that the sample proportion will not differ from the true proportion by more than 4%? [file:2235.jpg] | 1037

A pollster wishes to estimate the proportion of United States voters who favor capital punishment. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proportion by more than 3%? [file:2232.jpg] | 1068

In hypothesis testing, the null hypothesis should contain the equality sign. | True

[file:3641.jpg] | (ii)

(See picture) [file:2252.jpg] | Reject the null hypothesis

[file:3649.jpg] | (ii)

(See picture) [file:2255.jpg] | to = -1.98, fail to reject Ho

(See picture) [file:2259.jpg] | 29.07

(See picture) [file:2262.jpg] | (i)

(See picture) [file:2266.jpg] | -46.15

(See picture) [file:2271.jpg] | (iv)

(See picture) [file:3700.jpg] | 3.000

(See picture) [file:2279.jpg] | 4.098

(See picture) [file:2286.jpg] | 0.894

When products and processes are designed and developed with designed experiments, they enjoy | All of the others

Which statement is true? | Probability models quantify the risks involved in decisions made every day

How many baseball teams of nine members can be chosen from among twelve boys, without regard to the position played by each member? | 220

According to the U.S. census, in 2005, 21% of homicide victims were known to be female, 9.7% were known to be under the age of 18 and 2.8% were known to be females under the age of 18. What is the probability that a murder victim was known to be female or under the age of 18 based on these 2005 estimates? | 0.279

Among the contestants in a competition are 25 women and 25 men. If 3 winners are randomly selected, what is the probability that they are all men? | 0.117

For each of the following pairs of events, which are subsets of the set of all possible outcomes when a coin is tossed three times, choose the pair(s) is (are) independent. | All of the others

An electronic scale that displays weights to the nearest pound is used to weigh packages. The display shows only three digits. Any weight greater than the display can indicate is shown as 999. The random variable X is the displayed weight. What is the number of member in the sample space of X? | 1,000

A polltaker asked graduating college seniors how many times they had given blood in the last year. The results of the survey are given in the table. The random variable X represents the number of times a person gave blood and P(x) represents the probability of selecting a graduating college who had given blood that percent of the time. What is the standard deviation for the number of times a person gave blood based on this poll? [file:1911.jpg] | 1.16

Suppose that X has a discrete uniform distribution on the integers 1 to 15. Find 3V(X). | 56

Assume that a procedure yields a binomial distribution with a trial repeated n = 4 times. Use the binomial probability formula to find the probability of x=3 successes given the probability p=1/6 of success on a single trial. | 0.0154

In a certain manufacturing process it is known that, on the average, 1 in every 100 items is defective. What is the probability that the fifth item inspected is the first defective item found. | 0.0096

A naturalist leads whale watch trips every morning in March. The number of whales seen has a Poisson distribution with a mean of 4.3. Find the probability that on a randomly selected trip, the number of whales seen is 3. | 0.1798

The probability density function of the time required to complete an assembly operation is f(x)= 0.1 for 20≤ x ≤ 30 seconds. Determine the proportion of assemblies that requires more than 25 seconds to complete. | 0.50

(See picture) [file:1983.jpg] | 0.135

(See picture) [file:1989.jpg] | 5.76

(See picture) [file:2084.jpg] | (i)

The following data reflect the number of customers who test drove new cars each day for a sample of 20 days at the Redfield Ford Dealership. (See picture) Given these data, what is the range? [file:3562.jpg] | 14

(See picture) [file:2112.jpg] | (iv)

Find the sample standard deviation. 15 42 53 | 19.6

The following data reflect the number of customers who test drove new cars each day for a sample of 20 days at the Redfield Ford Dealership. (See picture) Given these data, what is the interquartile range? [file:3589.jpg] | 3

For sample size 16, the sampling distribution of the sample mean will be approximately normally distributed... | if the shape of the population is normally distributed.

(See picture) [file:2162.jpg] | 0.4562

It is desired to estimate the average total compensation of CEOs in the Service industry. Data were randomly collected from 18 CEOs and the 97% confidence interval was calculated to be (2181260, 5836180). Which of the following interpretations is correct? | We are 97% confident that the average total compensation of all CEOs in the Service industry falls in the interval 2181260 to 5836180.

(See picture) [file:2185.jpg] | 97

In a recent study of 42 eighth graders, the mean number of hours per week that they watched television was 19.6 with a population standard deviation of 5.8 hours. Find the 98% confidence interval for the population mean. [file:2188.jpg] | (17.5, 21.7)

A random sample of 10 parking meters in a beach community showed the following incomes for a day. 3.60 4.50 2.80 6.30 2.60 5.20 6.75 4.25 8.00 3.00 A simple computation yields a sample mean of 4.7 and standard deviation of 1.8. Assume the incomes are normally distributed. Find the 95% confidence interval for the true mean. [file:2201.jpg] | (3.41, 5.99)

In a recent study of 22 eighth graders, the mean number of hours per week that they watched television was 19.6 with a standard deviation of 5.8 hours. Construct a 90% confidence interval for the population mean. Assume the population has a normal distribution. [file:2209.jpg] | (17.47, 21.73)

A manufacturer of golf equipment wishes to estimate the number of left-handed golfers. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proprtion by more than 4%? A previous study indicates that the proportion of left-handed golfers is 10%. [file:2222.jpg] | 217

(See picture) [file:2228.jpg] | 0.59 ± 0.068

(See picture) [file:2245.jpg] | (iii)

(See picture) [file:2247.jpg] | 0.0027

An article stated that students in FPT university system take an average of 4.5 years to finish their undergraduate degrees. Suppose you believe that the average time is longer. You conduct a survey of 49 students and obtain a sample mean of 5.1 with a sample standard deviation of 1.2. Assume that time to finish their undergraduate degrees is normally distributed. Calculate the value of the test statistic and the critical values for this test statistic. Use a significance level of 0.05. [file:3645.jpg] | Test statistic: 3.5 and critical value: 1.645

Bon Air Elementary School has 300 students. The principal of the school thinks that the average IQ of students at Bon Air is at least 110. To prove her point, she administers an IQ test to 20 randomly selected students. Among the sampled students, the average IQ is 108 with a standard deviation of 10. What is the value of the test statistic? Assume the IQ of students is normally distributed. | -0.894

(See picture) [file:2258.jpg] | 9.209

[file:3656.jpg] | 16.875

(See picture) [file:2264.jpg] | (iii)

(See picture) [file:2268.jpg] | (i)

The residuals represent | the difference between the actual Y values and the predicted Y values.

(See picture) [file:3698.jpg] | 2.552

The height y and base diameter x of five trees of a certain variety produced the following data. Compute the correlation coefficient r. [file:2287.jpg] | 0.98

(See picture) [file:3690.jpg] | 0.948

The peak shopping time at home improvement store is between 8-11:00 am on Saturday mornings. Management at the home improvement store randomly selected 150 customers last Saturday morning and decided to observe their shopping habits. They recorded the number of items that a sapmle of the customers purchased as well as the total time the customers spent in the store. Identify the types of variables recorded by the home improvement store. | Number of items - discrete; total time - continuous

What is a method of collecting data? | A retrospective study using historical data

Flip a coin twice, create the sample space of possible outcomes. (Below, H stands for Head, T stands for Tail) | HH HT TH TT

A single six-sided die is rolled. Find the probability of rolling a number less than 3. | 0.333

(See picture) [file:1867.jpg] | disjoint but not independent.

A batch of 500 machined parts contains 10 that do not conform to customer requirements.Parts are selected succesively, without replacement, until a nonconforming part is obtained. Determine the range (possible values) of the random variable giving the number of parts selected. | [1, 491]

Let the random variable X have a discrete uniform distribution on the interval [1, 35]. Determine the mean and variance of X. | 18 and 102

Find the mean for the binomial distribution which has the stated values of n=20 and p=0.6. Round answer to the nearest tenth. | 12.0

The probability of a successful optical alignment in the assembly of an optical data storage product is 0.8. Assume the trials are independent. What is the probability that the first successful alignment requires exactly four trials? | 0.0064

(See picture) [file:1973.jpg] | 1.25

(See picture) [file:1982.jpg] | 0

Let X be a continuous random with f(x) is probability density function. Which the following statement(s) is (are) TRUE? | All of them

Assume that X has a normal distribution with the mean is µ= 15.2 and the standard deviation is σ = 0.9. Find the probability that X is greater than 16.1 | 0.1587

Find the mode for the sample composed of the observations 4, 5, 6, 6, 6, 7, 7, 8, 8, 5. | 6

Which of the following is an acceptable format for setting up class boundaries for a frequency distribution? | All of the other choices is correct

For sample size 1, the sampling distribution of the mean will be normally distributed | only if the population is normally distributed.

The heights of people in a certain population are normally distributed with a mean of 64 inches and a standard deviation of 3.1 inches. Determine the sampling distribution of the mean for samples of size 39. | Normal, mean = 64 inches, standard deviation = 0.5 inches

For sample sizes greater than 40, the sampling distribution of the mean will be approximately normally distributed... | regardless of the shape of the population.

A group of 49 randomly selected students has a mean age of 22.4 years with a population standard deviation of 3.8. Construct a 98% confidence interval for the population mean. [file:2194.jpg] | (21.1, 23.7)

(4335) (11081) [file:2182.jpg] | [765, 795]

The grade point averages for 10 randomly selected high school students are listed below, which implies a sample mean of 2.54 and a sample standard deviation of 1.11. Assume the grade point averages are normally distributed. 2.0 3.2 1.8 2.9 0.9 4.0 3.3 2.9 3.6 0.8 Find a 98% confidence interval for the true mean. [file:2211.jpg] | (1.55, 3.53)

Assume that the heights of men are normally distributed. A random sample of 16 men have a mean height of 67.5 inches and a standard deviation of 3.2 inches. Construct a 99% confidence interval for the population standard deviation, (sigma). [file:2224.jpg] | (2.2, 5.8)

A private opinion poll is conducted for a politician to determine what proportion of the population favors decriminalizing marijuana possession. How large a sample is needed in order to be 99% confident that the sample proportion will not differ from the true proportion by more than 6%? [file:2241.jpg] | 461

A statistics instructor believes that fewer than 20% of Evergreen Valley College (EVC) students attended the opening night midnight showing of the latest Harry Potter movie. She surveys 84 of her students and finds that 11 of attended the midnight showing. The Type I error is believing that the percent of EVC students who attended is: | less than 20%, when in fact, it is at least 20%

(See picture) [file:2246.jpg] | (iv)

(See picture) [file:2253.jpg] | Test statistic z = -8.43. There is sufficient evidence to warrant rejection of the claim that the population mean temperature is 22 degree C.

[file:3646.jpg] | (ii)

(See picture) [file:2257.jpg] | 14.573, 43.194

(See picture) [file:3694.jpg] | -0.93

It is believed that, the average numbers of hours spent studying per day (HOURS) during undergraduate education should have a positive linear relationship with the starting salary (SALARY, measured in thousands of dollars per month) after graduation. Given below is the Excel output from regressing starting salary on number of hours spent studying per day for a sample of 51 students. NOTE: Some of the numbers in the output are purposely erased. The error sum of squares (SSE) of the above regression is [file:3710.jpg] | 92.0218

Suppose a 95% confidence interval for µ turns out to be (1000, 2100). Give a definition of what it means to be 95% confident in an inference. | In repeated sampling, 95% of the intervals constructed would contain the population mean.

A random sample of 40 students has a mean annual earnings of 3120 and a population standard deviation of 677. Construct the confidence interval for the population mean. Use a 95% confidence level. | (2910, 3330)

A group of 40 bowlers showed that their average score was 192 with a population standard deviation of 8. Assume that bowler’s scores are normally distributed. Find the 95% confidence interval of the mean score of all bowlers. | (189.5, 194.5)

(See picture) | (186.3, 197.7)

Construct a 95% confidence interval for the population standard deviation of a random sample of 15 men who have a mean weight of 165.2 pounds with a standard deviation of 10.3 pounds. Assume the population is normally distributed. | (7.5, 16.2)

A researcher at a major hospital wishes to estimate the proportion of the adult population of the United States that has high blood pressure. How large a sample is needed in order to be 99% confident that the sample proportion will not differ from the true proportion by more than 4%? | 1037

A random sample of 10 parking meters in a beach community showed the following incomes for a day. 3.60 4.50 2.80 6.30 2.60 5.20 6.75 4.25 8.00 3.00 A simple computation yields a sample mean of 4.7 and standard deviation of 1.8. Assume the incomes are normally distributed. Find the 95% confidence interval for the true mean. | (3.41, 5.99)

In a recent study of 22 eighth graders, the mean number of hours per week that they watched television was 19.6 with a standard deviation of 5.8 hours. Construct a 90% confidence interval for the population mean. Assume the population has a normal distribution. | (17.47, 21.73)

A manufacturer of golf equipment wishes to estimate the number of left-handed golfers. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proprtion by more than 4%? A previous study indicates that the proportion of left-handed golfers is 10%. | 217

An article stated that students in FPT university system take an average of 4.5 years to finish their undergraduate degrees. Suppose you believe that the average time is longer. You conduct a survey of 49 students and obtain a sample mean of 5.1 with a sample standard deviation of 1.2. Assume that time to finish their undergraduate degrees is normally distributed. Calculate the value of the test statistic and the critical values for this test statistic. Use a significance level of 0.05. | Test statistic: 3.5 and critical value: 1.645

The height y and base diameter x of five trees of a certain variety produced the following data. Compute the correlation coefficient r. | 0.98

The grade point averages for 10 randomly selected high school students are listed below, which implies a sample mean of 2.54 and a sample standard deviation of 1.11. Assume the grade point averages are normally distributed. 2.0 3.2 1.8 2.9 0.9 4.0 3.3 2.9 3.6 0.8 Find a 98% confidence interval for the true mean. | (1.55, 3.53)

Assume that the heights of men are normally distributed. A random sample of 16 men have a mean height of 67.5 inches and a standard deviation of 3.2 inches. Construct a 99% confidence interval for the population standard deviation, (sigma). | (2.2, 5.8)

It is believed that, the average numbers of hours spent studying per day (HOURS) during undergraduate education should have a positive linear relationship with the starting salary (SALARY, measured in thousands of dollars per month) after graduation. Given below is the Excel output from regressing starting salary on number of hours spent studying per day for a sample of 51 students. NOTE: Some of the numbers in the output are purposely erased. The error sum of squares (SSE) of the above regression is | 92.0218

Suppose a 95% confidence interval for µ turns out to be (1000, 2100). Give a definition of what it means to be 95% confident in an inference | In repeated sampling, 95% of the intervals constructed would contain the population mean.

For sample sizes greater than 40, the sampling distribution of the mean will be approximately normally distributed. | regardless of the shape of the population.

In a sample of 25 randomly selected women, it was found that their mean height was 65.2 inches. From previous studies, it is assumed that the standard deviation, \sigma, is 2.4. Construct the 95% confidence interval for the population mean. | (64.3, 66.1)

A student randomly selects 22 CDs at a store. The mean is $8.5 with a standard deviation of $1.25. Construct a 95% confidence interval for the population standard deviation, \sigma. Assume the data are normally distributed. | ($0.96, $1.79)

A psychologist claims that more than 16 percent of the population suffers from professional problems due to extreme shyness. Use p, the true percentage of the population that suffers from extreme shyness. Express the null hypothesis H0 and the alternative hypothesis H1 in symbolic form. | H1: p >16%

Determine whether the given conditions justify testing a claim about a population mean μ. If so, what is formula for test statistic? The sample size is n = 49, σ = 12.3, s = 8.72 and the original population is not normally distributed. | Yes, test statistic = (\bar x - \mu)/(\sigma/\sqrt n)

A skeptical paranormal researcher claims that the proportion of Americans that have seen a UFO, p, is less than 1 in every one thousand. Assume that a hypothesis test of the given claim will be conducted. Identify the type I error for the test. | The error of rejecting the claim that the true proportion is at least 1 in one thousand when it really is at least 1 in one thousand.

A regression analysis between sales (in $1000) and advertising (in $) resulted in the following least squares line: \hat y = 50,000 + 7x. This implies that: | an increase of $1 in advertising is expected to result in an increase of $7000 in sales.

Suppose that you are interested in the relationship between the return on a stock this year (Y), compared to the return the year before (X). From a sample of 12 firms, you have collected the following information: | -0.76

A recent study by a major financial investment company was interested in determining whether the annual percentage change in stock price for companies is linearly related to the annual percent change in profits for the company. The following data was determined for 8 randomly selected companies: | = 4.19 + .61x

A sample of 8 households was asked about their monthly income (X) and the number of hours they spend connected to the internet each month (Y). The data yield the following statistics: | 23.46

The data below are the ages and systolic blood pressures (measured in millimeters of mercury) of 3 randomly selected adults. | 5.913

The data below are the exam scores of 4 randomly selected statistics students, what is the value of the test statistic for testing H\_0:\beta\_0=1 | 0.07

The mathematical science that deals with the collection, analysis, and presentation of data | Statistics

Statistics applied to the business world in an effort to improve people's decision making in fields such as marketing, operations, finance, and human resources | Business Statistics

Values assigned to observations or measurements, the building blocks of statistical analysis | Data

Data that is transformed into useful facts that can be used for the purpose of making decisions | Information

Data that somebody else has collected and made available for others to use | Secondary Data

The main drawback of using this type of data is that there is no way to control how the data were collected | Secondary Data

This type of data is sometimes wrong and can be deliberately biased, it is also cheap and sometimes free, as well as being immediately available | Secondary Data

Data collected by the person or organization that eventually uses the data | Primary Data

This type of data is more expensive to acquire, but the accuracy is solely dependent on the one who uses it | Primary Data

This type of data can be obtained via direct observation, experiments, or surveys | Primary Data

A method of gathering data while the subjects of interest are in their natural environment, the advantages of this are that the subjects are not likely to be influenced by the data collection process | Direct Observation

A direct observational technique where individuals are paid to discuss their attitudes toward products or services in a group setting with moderation | Focus Group

A method of gathering data where the subjects are exposed to certain treatments and the data of interest are recorded | Experiment

The advantages of this data collection method are that it allows statisticians to control factors that could influence the results of the study, such as gender, age, and education level | Experiment

The disadvantages of this data collection method are that the response of the subjects might be influenced by the fact that they are participating in a study | Experiment

A method of gathering data that involves directly asking people a series of questions, must be carefully designed to avoid bias, as the survey itself can influence the responses of the participants and the quality of the data | Survey

This occurs on surveys when a question is stated in a way that encourages or leads a respondent to a particular answer | Bias

A type of data that uses numerical values to describe something of interest, either by measuring or counting it | Quantitative Data

A type of data that uses descriptive terms to measure or classify something of interest, mathematical operations cannot be performed on this type of data | Qualitative Data

The lowest level of data, the statistical techniques used to analyze this type are restrictive | Nominal Data

This level of data deals strictly with qualitative data assigned to predetermined categories or labels, this type of data cannot have mathematical operations performed on it, and cannot be rank-ordered | Nominal Data

Examples of this level of data are gender, marital status, eye color, zip codes, or telephone numbers | Nominal Data

The second lowest level of data, there are more techniques that can be used to analyze this level of data, but they are still low | Ordinal Data

This level of data contains all of the properties of the level before it in addition to having the ability to be rank-ordered, however, mathematical operations can still not be performed on this type of data | Ordinal Data

In this level of data, the differences between categories are not meaningful and cannot be measured | Ordinal Data

Data that describe a characteristic about a population is known as a | parameter

Let X be the number of freshmen in the required course, MAS291. Identify whether X is discrete or continuous. | Discrete

Transportation off‌icials tell us that 70% of drivers wear seat belts while driving. Find the probability that more than 579 drivers in a sample of 800 drivers wear seat belts. | 0.9332

A basketball player is asked to shot free throws in sets of four. The player shoots 100 sets of 4 free throws. The probability distribution for making a particular number of free throws is given below. Determine the standard deviation for this discrete probability distribution. | 1.10

A method of gathering data when subjects are exposed to certain treatments and the data of interest is recorded is known as | experiments.

Medicare would like to test the hypothesis that the average monthly rate for one-bedroom assisted-living facility is equal to $3,300. A random sample of 12 assisted-living facilities had an average rate of $3,690 per month and a standard of $530. It is believed that the monthly rate for one-bedroom assisted-living facility is normally distributed. Use the signinicance level of 0.05 for this hypothesis test, what is the value of the test statistic? | 0.55

Construct a 95% conf‌idence interval for the population standard deviation of a random sample of 15 men who have a mean weight of 165.2 pounds with a standard deviation of 10.3 pounds. Assume the population is normally distributed. | (7.5, 16.2)

Trang Tien is a producer of ice cream and would like to test the hypothesis that the average consumes more than 17 ounces of ice cream per month. A random sample of 15 Vietnamese people was found to consume an average of 18.2 ounces of ice cream last month. The standard deviation for this sample was 3.9 ounces. What is the test statistic for this hypothesis test? | 1.19

A card is drawn from a standard deck of 52 playing cards. Find the probability thatthe card is an ace or a king. | 8/13

The probability density function ofthe length ofa hinge for fastening a door is f(x) = 1 for 74 < x < 75. Find P(X < 74.3). | 0.30

The probability of a successful optical alignment in the assembly of an optical data storage product is 0.8. Assume the trials are independent What is the probability thatthe f‌irst successful alignment requires exactly four trials? | 0.0064

An airline knows from experience that the distribution of the number of suitcases that get lost each week on a certain route is approximately normal with p = 15.5 and o = 3.6. What is the probability that during a given week the airline will lose less than 20 suitcases? | 0.8944

Suppose X has an exponential distribution with A = 2. Which in the following statements is TRUE? | All ofthe others

At a computer manufacturing company, the actual size of computer chips is normally distributed with a mean of1 centimeter and a standard deviation of 0.1 centimeter. A random sample of 12 computer chips is taken. What is the probability that the sample mean will be between 0.99 and 1.01 centimeters? | 0.27

Suppose that X has a discrete uniform distribution on the integers 10 to 99. Which of the followings are true? | Both (i) and (ii)

A laboratory tested 70 chicken eggs and found thatthe mean amount of cholesterol was 190 milligrams. Assume thatthe standard deviation is 151 milligrams. Construct a 95% lower conf‌idence bound for the true mean cholesterol content of all such eggs. | 187.03

A group of 10 individuals are used for a biological case study. The group contains 3 people with blood type 0, 7 with blood type A. What is the probability that a random sample of 5 will contain 1 person with blood type 0, 4 people with blood type A. | 0.42

Construct a 98% conf‌idence interval for the population mean. Assume the population has a normal distribution. A study of 14 bowlers showed that their average score was 192 with a standard deviation of 8. | (186.3, 197.7)

A group of students were asked ifthey carry a credit card. The responses are listed in the table. If a student is selected at random, f‌ind the probability that he or she owns a credit card given that the student is a freshman. | 0.400

A common rule of thumb for determining how many classes to use when developing a frequency distribution with classes is: | between 5 and 20 classes.

Given two events A and B with P(A) = 0.4, P(B) = 0.5. Find P(A U B) | 0.9, if A and B are independent

Suppose a 95% conf‌idence interval for population mean turns out to be (1000, 2100). To make more useful inferences from the data, it is desire to reduce the width of the conf‌idence interval. Which of the following will result in a reduced interval width? | Increase the sample size.

The random variable X represents the number of credit cards that adults have along with the corresponding probabilities. Find the mean and standard deviation. | mean: 1.18; standard deviation: 1.30

Of 1000 randomly selected cases of lung cancer, 731 resulted in death within 10 years. Calculate a 95% conf‌idence interval on the death rate from lung cancer. | (0.703; 0.758)

A group of 40 bowlers showed that their average score was 192 with a population standard deviation of 8. Assume that bowler’s scores are normally distributed. Find the 95% conf‌idence interval of the mean score of all bowlers. | (189.5. 194.5)

Consider the following sample data: 25 11 6 4 2 17 9 6 For these data the sample mean is: | 10

A golfer would like to test the hypothesis that the variance of his golf score equals 120. A random sample of 25 rounds of golf had a sample standard deviation 4.6. The test statistic for this hypothesis test would be: | None of the other choices is true

Two white mice mate. The male has both a white and a black fur-color gene. The female has only white fur-color genes. The fur color of the offspring depends on the pairs of fur-color genes that they receive. Assume that neither the white nor the black gene dominates. List the possible outcomes. W = white and B = black. Create the sample space of possible outcomes. | WW. BW

Each morning, a teacher quizzed his class with 20 geography questions. The class marked them together and everyone kept a record of their personal scores. As the year passed, each student tried to improve his or her quiz marks. Every day, Elliot recorded his quiz marks on a stem and leaf plot. This is what his marks looked like plotted out: | 20 and 15

The correlation coefficient between variables X and Y is positive and close to 1. The relationship between the variables X and Y is\_\_\_\_\_\_\_\_\_ | a strong linear relationship and as X increases, Y increases

A trucking firm suspects that the variance for a certain tire is greater than 1,000,000. To check the claim, the firm puts 151 of these tires on its trucks and gets a standard deviation of 1012 miles. Find the value of the test statistic to test the trucking firm's claim at the significance level of 0.05. | 153.6

Assume that human body temperatures are normally distributed with a mean of 98 (degree F) and a standard deviation of 0.5(degree F). Describe the sampling distribution for the sample mean body temperature of 50 selected persons. | Approximately normal with a mean of 98(degree F) and a standard deviation of 0.07(degree F)

Expedia would like to test the hypothesis that the proportion of United Airline flights that arrive on-time is less than 0.80. A random sample of 1 10 United Airline flights found that 82 arrived on-time. Expedia would like to set the significant level to be 0.02. The test statistic forthis hypothesis test would be: | -1.43

A random number generator generates random integers from 1 to 10 following a uniform distribution. What is the probability of the random number generator generating a 7? | 1/10

Let X be a uniform random variable over the interval [0.1, 5] . What is the probability that the random variable X has a value less than 2.1? | 0.4082

Tossing a coin 3 times. Let A denote the event exactly 2 heads are thrown. List the sample points in A. (H = Head, T = Tail) | {HHT, HTH, THH}

Major league baseball salaries averaged $1.5 million with a standard deviation of $0.8 million in 1994. Suppose a sample of 100 major league players was taken. Find the approximate probability that the average salary of the 100 players exceeded $1 million. | 0.734

A batch of 50 machined parts contains 5 thatdo not conform to customer requirements. Determine the range of the random variable that is the number of parts that do not conform to customer requirements in a sample of 8 parts selected without replacement from the batch. | {0, 1, 2, 3, 4, 5}

A couple has six children whose ages are 6, 8, 10, 12, 14, and 16. Find the variance in ages. | 3.74

Find the mode and the median ofthe sample 18, 19, 16, 21, 18, 19, 24, 15, 19 | 19 and 19

Entertainment Software Association would like to test if the standard deviation for the age of gamers is equal to 5.0 years. The standard deviation for the age from a random sample of 20 gamers is 5.6 years. Using the significance level of 0.10, find the lower critical value for this hypothesis test. | 10.117

Suppose that P(A | B) = 0.6, P(A) = 0.5 and P(B) = 0.1. Find the value of P(B | A). | 0.12

A \_\_\_\_\_\_\_\_ is a portion ofa population that is representative of the population from which it is selected. | parameter