**QUESTION 1**

1. A sample of salary offers (in thousands of dollars) given to management majors is: 28, 31, 26, 32, 27, 28, 27, 30, 31, and 29. Using this data to obtain a 95% confidence interval resulted in an interval from 27.5 to 30.3. 95% of the time, the sample mean salary offer to management majors will fall between 27.5 and 30.3.

 True

 False

**QUESTION 2**

1. 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. The 95% confidence interval for *p* is 0.59 +/- 0.07. Interpret this interval.

|  |  |  |
| --- | --- | --- |
|  |  | We are 95% confident that the true proportion of all students receiving financial aid is between 0.52 and 0.66. |
|  |  | 95% of the students get between 52% and 66% of their tuition paid for by financial aid. |
|  |  | We are 95% confident that between 52% and 66% of the sampled students receive some sort of financial aid. |
|  |  | We are 95% confident that 59% of the students are on some sort of financial aid. |

**QUESTION 3**

1. CI proportion 3  
   In a study conducted using members of the Human Resource Management Society, 453 of 854 personnel officials indicated that job seekers sometimes falsify past salaries. A 95% confidence interval estimate of the proportion is constructed. What is the lower limit for the confidence interval estimate?

|  |  |  |
| --- | --- | --- |
|  |  | 0.53 |
|  |  | 0.497 |
|  |  | 0.564 |
|  |  | None of these |

**QUESTION 4**

1. CI t 3  
   In NY savings banks can sell life insurance. Once sold it is important that the bank be able to deliver approved policies in a timely manner. Within a month period, a random sample of 27 policies was selected and the processing time in days was recorded, as follows. A 95% confidence interval estimate of the mean processing time is constructed. A 95% confidence interval estimate of the mean processing time is constructed. What is the upper limit of the confidence interval?  
   ..  
   **Time  
   73, 19, 16 ,64, 28 ,28, 31, 90 ,60, 56, 31, 56, 22 ,18, 45, 48, 17, 17 ,17, 91, 92, 63, 50, 51 ,69, 16 ,17  
   .**

|  |  |  |
| --- | --- | --- |
|  |  | 34.35 |
|  |  | 53.43 |
|  |  | 53.89 |
|  |  | None of these |

**QUESTION 5**

1. A sample of salary offers (in thousands of dollars) given to management majors is: 28, 31, 26, 32, 27, 28, 27, 30, 31, and 29. Using this data to obtain a 95% confidence interval resulted in an interval from 27.5 to 30.3. It is possible that the mean of the population is not between 27.5 and 30.3.

 True

 False

**QUESTION 6**

1. A major department store chain is interested in estimating the average amount its credit card customers spent on their first visit to the chain's new store in the mall. Fifteen credit card accounts were randomly sampled and analyzed with the following results: mean is $50.50 and variance is 400. Construct a 95% confidence interval for the average amount its credit card customers spent on their first visit to the chain's new store in the mall, assuming that the amount spent follows a normal distribution.

|  |  |  |
| --- | --- | --- |
|  |  | $50.50 +/- $9.09 |
|  |  | $50.50 +/-$10.12 |
|  |  | $50.50 +/- $11.00 |
|  |  | $50.50 +/- $11.08 |

**QUESTION 7**

1. 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). Which of the following interpretations is correct?

|  |  |  |
| --- | --- | --- |
|  |  | 97% of the sampled total compensation values fell between $2,181,260 and $5,836,180. |
|  |  | We are 97% confident that the mean of the sampled CEOs falls in the interval $2,181,260 to $5,836,180. |
|  |  | In the population of Service industry CEOs, 97% of them will have total compensations that fall in the interval $2,181,260 to $5,836,180. |
|  |  | We are 97% confident that the average total compensation of all CEOs in the Service industry falls in the interval $2,181,260 to $5,836,180. |

**QUESTION 8**

1. CI t 2  
   In NY savings banks can sell life insurance. Once sold it is important that the bank be able to deliver approved policies in a timely manner. Within a month period, a random sample of 27 policies was selected and the processing time in days was recorded, as follows. A 95% confidence interval estimate of the mean processing time is constructed. What is the lower limit of the confidence interval?  
   .  
   **TTime  
   73, 19, 16 ,64, 28 ,28, 31, 90 ,60, 56, 31, 56, 22 ,18, 45, 48, 17, 17 ,17, 91, 92, 63, 50, 51 ,69, 16 ,17  
   .**

|  |  |  |
| --- | --- | --- |
|  |  | 34.35 |
|  |  | 53.43 |
|  |  | 33.89 |
|  |  | None of these |

**QUESTION 9**

1. t distribution 4  
   In estimating the population mean with the population standard deviation unknown, if the sample size is 12, there will be 6 degrees of freedom

 True

 False

### QUESTION 10

1. Given a sample mean of 2.1 and a sample standard deviation of 0.7, a 90% confidence interval will have a width of 2.36. (n=36)

 True

 False

**QUESTION 11**

1. A sample of 100 fuses from a very large shipment is found to have 10 that are defective. The 95% confidence interval would indicate that, for this shipment, the proportion of defective fuses is between 0 and 0.28.

 True

 False

**QUESTION 12**

1. t dist 2  
   The t-distribution is used to construct confidence intervals for the population mean when the population standard deviation is unknown.

 True

 False

**QUESTION 13**

1. If you were constructing a 95% confidence interval of a proportion based on sample of *n* = 1100 workers, the critical value of z will be

|  |  |  |
| --- | --- | --- |
|  |  | 1.96 |
|  |  | 2.57 |
|  |  | 1.33 |
|  |  | none of the above |

**QUESTION 14**

1. Pt Est  
   The sample mean is a point estimate of the population mean.

 True

 False

**QUESTION 15**

1. CI 4  
   For a given data set and confidence level, the confidence interval will be wider for 95% confidence than for 90% confidence.

 True

 False

**QUESTION 16**

1. The president of a university would like to estimate the proportion of the student population who owns a personal computer. In a sample of 500 students, 417 own a personal computer. A 99% confidence interval for the proportion of the student population who own a personal computer is from 0.7911 to 0.8769.

 True

 False

**QUESTION 17**

1. Which of the following is NOT true about the Student's *t* distribution?

|  |  |  |
| --- | --- | --- |
|  |  | It has more area in the tails and less in the center than does the normal distribution. |
|  |  | It is used to construct confidence intervals for the population mean when the population standard deviation is known. |
|  |  | It is bell shaped and symmetrical. |
|  |  | As the number of degrees of freedom increases, the *t* distribution approaches the normal distribution. |

**QUESTION 18**

1. CI proportion 2  
   In a study conducted using members of the Human Resource Management Society, 453 of 854 personnel officials indicated that job seekers sometimes falsify past salaries. A 95% confidence interval estimate of the proportion is constructed. What is the upper limit for the confidence interval estimate?

|  |  |  |
| --- | --- | --- |
|  |  | 0.53 |
|  |  | 0.49 |
|  |  | 0.56 |
|  |  | None of these |

**QUESTION 19**

1. A 99% confidence interval estimate can be interpreted to mean that

|  |  |  |
| --- | --- | --- |
|  |  | 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. |
|  |  | we have 99% confidence that we have selected a sample whose interval does include the population mean. |
|  |  | both of the above |
|  |  | none of the above |

**QUESTION 20**

1. The actual voltages of power packs labeled as 12 volts are as follows: 11.77, 11.90, 11.64, 11.84, 12.13, 11.99, and 11.77. It is possible that the 99% confidence interval calculated from the data will not contain the mean voltage for the sample.

 True

 False