SOLUTIONS

(1) Statistical inference helps us make inferences about ______________________. **(E)**

(2) Mistakes are unavoidable in statistical inference. Which are taken into account by the formulas used for statistical inference? **(A)**

(3) What does the Central Limit Theorem help us determine? **(D)**

(4) Why is the Student t distribution important for statistical inference? **(C)**

(5) How do you choose the significance level for a specific problem? **(A)**

(6) Suppose you draw a random sample of 100 observations from a population with mean = 20 and variance = 25. What is the probability that the sample mean is greater than 21? **(B)**

(7) Which statement about this probability distribution is true? **(B)**

(8) If one cashier is randomly selected, what is the chance that cashier made less than the average number of mistakes? **(B)**

(9) If 100 cashiers are randomly selected, what is the chance that the sample on average made two or more mistakes? **(A)**

(10) Suppose you used this formula $\overline{X} \pm z_{0.05} \frac{\sigma}{\sqrt{n}}$ and correctly computed a 90% confidence interval estimator of the population mean to be [10, 30]. Which of the following is FALSE? **(D)**

(11) If Z is a Standard Normal random variable, what is P(Z > -1)? **(E)**

(12) To compute the 99% confidence interval estimator of the population mean with sample size 10, which is the correct tabular t value to use? **(E)**

(13) When the Central Limit Theorem applies, what is the chance that the sample mean is smaller than the population mean? **(B)**

(14) For a confidence interval estimator, the ________________________ determines the probability it includes μ. **(D)**

(15) Which is a necessary condition for the sample proportion to be an unbiased estimator of the population proportion? **(C)**

(16) For which can you use the Standard Normal table to compute the probability that the political candidate exceeds expectations? **(B)**

(17) What would reduce the underlined number above (0.334)? **(B)**

(18) What is the total width of the 90% confidence interval estimator of the population mean? **(E)**