

Statistical Analysis

- 1) In order to determine an interval for the mean of a population with an unknown standard deviation a sample of 61 items is selected. The mean of the sample is determined to be 23. The number of degrees of freedom for reading the t value is:
- a. 61
 - b. 60
 - c. 23
 - d. 22

Competency: Confidence intervals

- 2) When constructing a confidence interval for the population mean and the standard deviation of the sample is used, the degrees of freedom for the t distribution equals:
- a. n
 - b. n-1
 - c. 30
 - d. 29

Competency: Confidence intervals

- 3) A two-tailed test is performed at 95 percent confidence. The p-value is determined to be 0.09. What is the correct statistical decision regarding the null hypothesis?
- a. the null hypothesis must be rejected
 - b. the null hypothesis has been designed incorrectly
 - c. the null hypothesis could be rejected, depending on the sample size
 - d. the null hypothesis should not be rejected

Competency: Hypothesis testing

- 4) The manager of a grocery store has taken a random sample of 100 customers. The average length of time it took these 100 customers to check out was 5.1 minutes with a standard deviation of 0.5 minutes. We want to test to determine whether or not the mean waiting time of all customers is significantly more than 5 minutes. The value of the appropriate test statistic for this hypothesis test is approximately equal to:
- a. 2.60
 - b. 1.1
 - c. 1.645
 - d. 2

Competency: Hypothesis testing

- 5) In a two-variable simple linear regression model with dependent variable Y and independent variable X, if the r-square statistics is close to one but none of the independent variables are significantly different from zero, which regression assumption is violated?
- a. multicollinearity
 - b. homoskedasticity
 - c. normality of the errors
 - d. independence of the errors

Competency: Linear regressions

- 6) A table that is used to summarize data on two variables is called a:
- a. moment matrix
 - b. tablet
 - c. crosstabulation
 - d. hypothesis matrix

Competency: Organizing and presenting statistical data

- 7) Suppose 5000 workers at a mid-size company are sampled and are asked how many hours they work on average each week. If the resulting histogram indicates the number of hours worked on average each week by workers at a mid-size company using three classes of 0 – 9 hours, 10 – 19 hours, 20 – 29 hours, 30 – 39 hours, and 40 – 49 hours, then the class width of each class is:
- a. 9 hours
 - b. 10 hours
 - c. 20 hours
 - d. 50 hours

Competency: Organizing and presenting statistical data

- 8) The Poisson probability distribution is a:
- a. discrete probability distribution
 - b. continuous probability distribution
 - c. normal probability distribution
 - d. uniform probability distribution

Competency: Probability distributions

- 9) A food processor packages strawberry preserves in small jars. The weights of the jars are approximately normally distributed with a mean of 9.5 ounces and a standard deviation of 1.6 ounces. A sample of 64 jars is selected. Using the standard normal distribution, what is the proportion of all jars packaged by this process that have weights that fall below 9.8 ounces?
- a. $P(Z < 1.5) = 0.9332$
 - b. $P(Z < -1.5) = 0.0668$
 - c. $P(Z < 2) = 0.9772$
 - d. $P(Z > 2) = 0.0228$

Competency: Sampling techniques

- 10) Quantitative data must be:
- a. only non-numeric
 - b. either non-numeric or numeric
 - c. only numeric
 - d. only nominal

Competency: STAT-description statistical analyses

ANSWER KEY

1. b
2. b
3. d
4. d
5. a
6. c
7. b
8. a
9. a
10. c