

## Quiz

1. Suppose that your hypothesis is as follows: Client gain scores will be higher for clients with children than clients without children. What statistical test would be appropriate for testing this hypothesis?
  - a. The chi square test, which examines the relationship between two variables measured at the nominal level
  - b. The one-sample  $t$  test, which compares the mean of a set of scores to a single score
  - c. The analysis of variance, which compares the mean scores of three or more groups of people
  - d. The independent-samples  $t$  test, which compares the mean scores of two groups of people
2. Suppose your hypothesis is as follows: There is a positive relationship between client gain scores and age. What statistical test would be appropriate for testing this hypothesis?
  - a. The chi square test, which examines the relationship between two variables measured at the nominal level
  - b. The Pearson correlation coefficient, which examines the relationship between two variables measured at the interval level
  - c. The one-sample  $t$  test, which compares the mean of a set of scores to a single score
  - d. The binomial test, which compares an array of scores with a proportion that represents a threshold for comparison
3. Suppose your hypothesis is as follows: There is a relationship between gain scores and the geographic district of the client (where there are four geographic districts where clients reside). What statistical test would be appropriate for testing this hypothesis?
  - a. The chi square test, which examines the relationship between two variables measured at the nominal level
  - b. The one-sample  $t$  test, which compares the mean of a set of scores to a single score
  - c. The analysis of variance, which compares the mean scores of three or more groups of people
  - d. The independent-samples  $t$  test, which compares the mean scores of two groups of people
4. Client gain scores are measured at what level?
  - a. Nominal
  - b. Ordinal
  - c. Interval or ratio
  - d. Dichotomous

5. If you found a positive correlation between age and client gain score of .54 ( $p < .05$ ), this would mean that:
  - a. People who were higher than others on one of these variables would tend to be higher than others on the other variable.
  - b. People who were higher than others on one of these variables would tend to be lower than others on the other variable.
  - c. The person with the highest score on one of these variables would definitely have the highest score on the other variable.
  - d. There is really no pattern in the relationship between age and client gain scores.
  
6. Suppose that you found that clients in the Northern district of the county had a mean client gain score of 7.2, clients in the Southern district had a mean gain of 5.4, and clients in the Western district had a mean of 3.4. You found furthermore that this difference is statistically significant ( $p < .05$ ). What would these findings mean?
  - a. There is a positive relationship between client gain and the district where the client resides.
  - b. There is a significant difference in gain scores among these three districts.
  - c. Both of the above
  - d. Neither of the above
  
7. Which of the following statements is/are true?
  - a. Multiple regression analysis is used to examine the relationships among more than two variables as, for example, when you want to know whether age is related to client gain score when income is taken into consideration.
  - b. Analysis of variance is appropriate if all your variables are measured at the nominal level.
  - c. Both of the above are true.
  - d. Neither of the above is true.
  
8. Which of the following is/are true?
  - a. A variable measured at the nominal level can be treated as though it is measured at the ordinal level for statistical analysis of data.
  - b. A variable measured at the interval level can be treated as though it is measured at the ordinal level for statistical analysis of data.
  - c. Both of the above are true.
  - d. Neither of the above is true.
  
9. Suppose that you were examining this question: Does self-esteem score predict number of disciplinary actions taken against high-risk middle school boys when grades are taken into consideration? You have measured boys' self-esteem with a scale that gives higher scores for self-esteem, and grades are measured in a numerical fashion (i.e., 67, 71, 55, etc.). The number of disciplinary actions

for each middle school student is recorded each month for a year. Your analysis of correlations indicates a significant negative correlation between self-esteem and disciplinary actions and a significant negative correlation between grades and disciplinary actions. You want to know how well the independent variables predict disciplinary actions. What statistical test could you use for this analysis?

- a. Chi square
  - b. Spearman correlation
  - c. Multiple regression analysis
  - d. Independent-samples  $t$  test
10. For the example given in the previous question, suppose you used a multivariate statistic to examine the relationship of both grades and self-esteem (independent variables) and disciplinary actions (dependent variable). Suppose further that you found a standardized regression coefficient (beta) of .54 for self-esteem and of .34 for grades and that both of these coefficients were statistically significant. How should you interpret these data?
- a. Both self-esteem and grades are predictors of disciplinary actions, but grades do a better job of it.
  - b. Both self-esteem and grades are predictors of disciplinary actions, but self-esteem does a better job of it.
  - c. Self-esteem is a predictor of disciplinary actions, but grades are not.
  - d. Grades are a predictor of disciplinary actions, but self-esteem is not.