SOLUTIONS

(1) If an employee were randomly selected, what interval would you be 90% confident would include the employee's wage? **(d)**

(2) What is the probability that the population mean is greater than $51.25? **(a)**

(3) For which corporation could water consumption be normally distributed? **(a)**

(4) If X is normally distributed with mean 57 and standard deviation 2, for a random sample of 12, what is $P(\overline{X} < 57)$? **(b)**

(5) What is the rejection region for this hypothesis test? **(c)**

(6) Which of the following is closest to the p-value of this hypothesis test? **(e)**

(7) Suppose a computer printout for a hypothesis test reports a p-value of 0.0003. What statistical inference could you reasonably make? **(a)**

(8) Which of the following is the Type II error? **(d)**

(9) Which is the correct specification of H_0 and H_1? **(e)**

(10) Which of the following specifications of hypotheses and significance levels would best reflect Mr. Jacobson's views? **(b)**

(11) Which of the following statements about the relationship among economic significance, statistical significance, and sample sizes is TRUE? **(d)**

(12) With conventional significance levels, which is the <u>most powerful</u> statistical test? **(c)**

(13) Which of the data collection plans will provide <u>observational data</u> about attendance rates and monetary incentive programs? **(a)**

(14) In which of the following cases, which specify a data collection plan, a research hypothesis, and a p-value, would the conclusion that the monetary incentive programs are effective in increasing attendance be <u>most justified</u>? **(d)**

(15) If a non-directional research hypothesis is specified and a 5% significance level used, which could be the rejection region? **(e)**

(16) What is the 95% confidence interval estimate of the fraction of cellular telephone users that are extremely likely to switch in the next 6 months? **(c)**

(17) What is the 95% confidence interval estimate of the average number of months cellular telephone users have been with their service provider? **(c)**

(18) What is the p-value for the implied hypothesis test? **(a)**

(19) What is the covariance between X_1 and X_2? **(d)**

(20) In obtaining confidence interval (CI) estimates of the difference between population means, what, if anything, does the coefficient of correlation between X_1 and X_2 imply about the width of the CI estimates when treating these data as matched-pair versus independent samples? **(d)**