

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve the problem.

- 1) What is $z_{\alpha/2}$ when $\alpha = 0.01$? 1) _____
A) 1.645 B) 2.575 C) 1.96 D) 2.33
- 2) Explain what the phrase 95% confident means when we interpret a 95% confidence interval for μ . 2) _____
A) The probability that the sample mean falls in the calculated interval is 0.95.
B) 95% of the observations in the population fall within the bounds of the calculated interval.
C) In repeated sampling, 95% of similarly constructed intervals contain the value of the population mean.
D) 95% of similarly constructed intervals would contain the value of the sampled mean.
- 3) A 90% confidence interval for the average salary of all CEOs in the electronics industry was constructed using the results of a random survey of 45 CEOs. The interval was (\$99,943, \$113,695). Give a practical interpretation of the interval. 3) _____
A) 90% of all CEOs in the electronics industry have salaries that fall between \$99,943 to \$113,695.
B) We are 90% confident that the mean salary of the sampled CEOs falls in the interval \$99,943 to \$113,695.
C) We are 90% confident that the mean salary of all CEOs in the electronics industry falls in the interval \$99,943 to \$113,695.
D) 90% of the sampled CEOs have salaries that fell in the interval \$99,943 to \$113,695.
- 4) Suppose a 95% confidence interval for μ turns out to be (140, 260). To make more useful inferences from the data, it is desired to reduce the width of the confidence interval. What will result in a reduced interval width? 4) _____
A) Increase the sample size and decrease the confidence level.
B) Decrease the confidence level.
C) Increase the sample size.
D) All of the choices will result in a reduced interval width.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 5) As an aid in the establishment of personnel requirements, the director of a hospital wishes to estimate the mean number of people who are admitted to the emergency room during a 24-hour period. The director randomly selects 64 different 24-hour periods and determines the number of admissions for each. For this sample, $\bar{x} = 15.4$ and $s^2 = 16$. 5) _____
1. Give a point estimate of the mean number of admissions per 24-hour period.
 2. Estimate the mean number of admissions per 24-hour period with a 95% confidence interval.
 3. Interpret the confidence interval.

6) The increasing cost of health care is an important issue today. Suppose that a random sample of 23 small companies that offer paid health insurance as a benefit was selected. The mean health insurance cost per worker per month was \$132, and the standard deviation was \$32. 6) _____

1. Give a point estimate of the mean health cost per worker per month for all small companies.

2. Calculate a 90% confidence interval for the mean health cost per worker per month for all small companies.

3. Interpret the confidence interval.

7) A survey of 280 homeless persons showed that 63 were veterans. 7) _____

1. find the point estimate for estimating the proportion of homeless persons who are veterans.

2. Estimate the true proportion of homeless persons who are veterans using a 99% confidence interval.

3. Interpret the confidence interval.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Provide an appropriate response.

8) A nurse at a local hospital is interested in estimating the birth weight of infants. How large a sample must she select if she desires to be 95% confident that the true mean is within 3 ounces of the sample mean? The standard deviation of the birth weights is known to be 6 ounces. 8) _____
A) 3 B) 4 C) 15 D) 16

9) A manufacturer of golf equipment wishes to estimate the number of left-handed golfers. How large a sample is needed in order to be 95% confident that the sample proportion will not differ from the true proportion by more than 4%? A previous study indicates that the proportion of left-handed golfers is 9%. 9) _____
A) 217 B) 139 C) 197 D) 19

10) A pollster wishes to estimate the proportion of United States voters who favor capital punishment. How large a sample is needed in order to be 98% confident that the sample proportion will not differ from the true proportion by more than 3%? 10) _____
A) 20 B) 1509 C) 3017 D) 1068

Answer Key

Testname: PRACTICE-CH7(A)

- 1) B
- 2) C
- 3) C
- 4) D
- 5) 15.4 ± 1.288
- 6) 132 ± 11.457
- 7) $.5625 \pm .0202$
- 8) D
- 9) C
- 10) B