

Confidence Intervals Summary

1) Of 380 randomly selected medical students, 21 said that they planned to work in a rural community. Find a 95% confidence interval for the true proportion of all medical students who plan to work in a rural community. 1) _____

- A) $0.0323 < p < 0.0782$ B) $0.0360 < p < 0.0745$ C) $0.0251 < p < 0.0854$

2) Which of the following critical values is appropriate for a 98% confidence level where $n = 7$; $\sigma = 27$ and the population appears to be normally distributed. 2) _____

- A) $t_{\alpha/2} = 1.96$ B) $t_{\alpha/2} = 2.575$ C) $z_{\alpha/2} = 2.33$ D) $z_{\alpha/2} = 2.05$

3) Use the given degree of confidence and sample data to construct a confidence interval for the population mean μ . Assume that the population has a normal distribution. 3) _____

A laboratory tested twelve chicken eggs and found that the mean amount of cholesterol was 185 milligrams with $s = 17.6$ milligrams. Construct a 95% confidence interval for the true mean cholesterol content of all such eggs.

- A) $173.7 \text{ mg} < \mu < 196.3 \text{ mg}$ B) $175.9 \text{ mg} < \mu < 194.1 \text{ mg}$ C) $173.8 \text{ mg} < \mu < 196.2 \text{ mg}$

4) A laboratory tested 82 chicken eggs and found that the mean amount of cholesterol was 228 milligrams with $\sigma = 19.0$ milligrams. Construct a 95% confidence interval for the true mean cholesterol content, μ , of all such eggs. 4) _____

- A) $225 \text{ mg} < \mu < 233 \text{ mg}$ B) $223 \text{ mg} < \mu < 231 \text{ mg}$ C) $224 \text{ mg} < \mu < 232 \text{ mg}$

5) Use the given degree of confidence and sample data to construct a confidence interval for the population mean μ . Assume that the population has a normal distribution. 5) _____

$n = 30$, $\bar{x} = 84.6$, $s = 10.5$, 90% confidence

- A) $81.36 < \mu < 87.84$ B) $81.34 < \mu < 87.86$ C) $79.32 < \mu < 89.88$

6) A group of 59 randomly selected students have a mean score of 29.5 with a standard deviation of 5.2 on a placement test. What is the 90% confidence interval for the mean score, μ , of all students taking the test? 6) _____

- A) $27.8 < \mu < 31.2$ B) $27.9 < \mu < 31.1$ C) $28.4 < \mu < 30.6$

7) Use the given data to find the minimum sample size required to estimate the population proportion. 7) _____

Margin of error: 0.008; confidence level: 98%; \hat{p} and \hat{q} unknown

- A) 20,308 B) 21,207 C) 22,184 D) 10,384

8) Express the confidence interval $0.039 < p < 0.479$ in the form of $\hat{p} \pm E$. 8) _____

- A) 0.259 ± 0.44 B) 0.259 ± 0.22 C) 0.22 ± 0.5 D) 0.259 ± 0.5

9) Identify the distribution that applies to the following situation: 9) _____

In constructing a confidence interval of μ , you have 50 sample values and they appear to be from a population with a skewed distribution. The population standard deviation is not known.

- A) Normal distribution B) Student t distribution

Answer Key

Testname: REVIEW_CIS

- 1) A
- 2) C
- 3) C
- 4) C
- 5) B
- 6) C
- 7) B
- 8) B
- 9) B