ARKANSAS STATISTICS · UNIT 3 · 25 QUESTIONS

Statistical Inference — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The entire group of interest in a study is called the**

- A Sample
- B Population
- C Statistic
- D Parameter

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2 **A number computed from sample data is called a**



A Parameter

B Statistic

C Population

D Census

Understand It with Pulse | Flag a mistake

3 **A number describing a population is called a**

A Statistic

B Sample

C Parameter

D Estimate only

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4 **The mean of a sampling distribution of sample means equals the**

A Sample mean only

B Standard deviation

C Sample size

D Population mean

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5 **A population standard deviation is 12 and the sample size is 36 The standard error of the sample mean is 12 / 6 The standard error is**

- A 2
- B 1
- C 3
- D 6

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6 **A population standard deviation is 20 and the sample size is 25 The standard error of the sample mean is 20 / 5 The standard error is**

- A 2
- B 4
- C 5
- D 10

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7 **A sample mean is 50 with a margin of error of 4 A confidence interval for the population mean is**

A 50 to 54

B 42 to 50

C 46 to 54

D 54 to 58

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8 **A 95 percent confidence interval is best interpreted as follows, if the method were repeated many times**



A The probability the true mean is in this interval is exactly 95 percent

B 95 percent of sample values lie in the interval

C The sample mean is correct 95 percent of the time

D About 95 percent of the intervals formed would contain the true population mean

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9 **Increasing the confidence level from 90 percent to 99 percent, with the same sample The interval becomes**

A Wider

B Narrower

C Unchanged

D Centered at zero

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10 **Increasing the sample size, with the same confidence level The margin of error generally becomes**



A Larger

B Smaller

C Unchanged

D Zero

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11 **The null hypothesis in a test for a difference usually states that there is**

- **A** A large difference
- **B** A proven effect
- **C** No difference
- **D** A bias

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12 **A p value is the probability of data at least as extreme as observed, assuming the**

- **A** Alternative hypothesis is true
- **B** Sample is biased
- **C** Effect is large
- **D** Null hypothesis is true

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13 **A p value is 0.03 and the significance level is 0.05 The decision is to**

A Reject the null hypothesis

B Fail to reject the null hypothesis

C Accept the null hypothesis as proven

D Increase the sample size

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14 **A p value is 0.12 and the significance level is 0.05 The decision is to**



A Reject the null hypothesis

B Fail to reject the null hypothesis

C Prove the null hypothesis

D Change the significance level

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15 **A Type 1 error occurs when a true null hypothesis is**

- A Not rejected
- B Proven
- C Rejected
- D Ignored

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16 **A Type 2 error occurs when a false null hypothesis is**

- A Rejected
- B Proven
- C Ignored
- D Not rejected

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17 **A sample mean is 58 , the population mean under the null hypothesis is 50 , and the standard error is 4 The test statistic is $\frac{8}{4}$ The test statistic is**

A 2

B 0.5

C 8

D 12

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18 **For a small sample when the population standard deviation is unknown, the test should use a**

A Z distribution

B T distribution

C Normal table only

D Chi square table only

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19 **A sample proportion is 0.5 with a sample size of 100 The standard error is the square root of 0.25 / 100 The standard error is**

- A 0.025
- B 0.25
- C 0.05
- D 0.5

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20 **Voluntary response sampling is biased because people who choose to respond may**



A Be a random sample

B All agree

C Be too many

D Differ systematically from those who do not respond

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21 **Random sampling helps reduce bias because every member has a known chance of being**

- **A** Selected
- **B** Excluded
- **C** Persuaded
- **D** Counted twice

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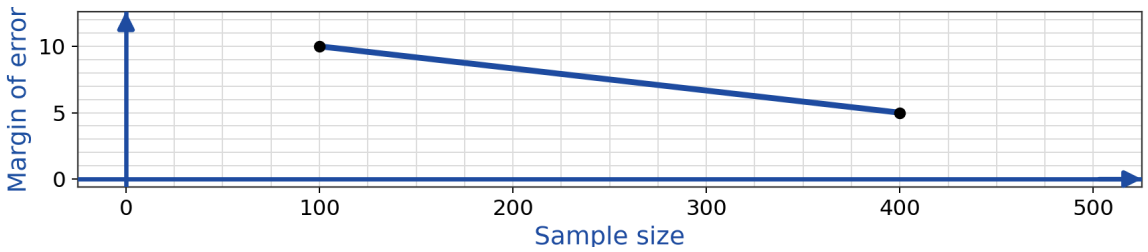
22 **The graph shows margin of error falling as sample size grows Quadrupling the sample size roughly**



- **A** Doubles the margin of error
- **B** Halves the margin of error
- **C** Leaves the margin unchanged
- **D** Quadruples the margin of error

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23 **A larger sample size makes the sampling distribution of the mean**

- A More spread out
- B Unchanged
- C Less spread out
- D Skewed

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24 **A population standard deviation is 15 and the sample size is 9 What is the standard error of the sample mean**

ANSWER _____

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25 **A sample mean is 72, the population mean under the null hypothesis is 60, and the standard error is 6 What is the test statistic**

ANSWER _____

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ANSWER KEY

1. B
2. B
3. C
4. D
5. A
6. B
7. C
8. D
9. A
10. B
11. C
12. D
13. A
14. B
15. C
16. D
17. A
18. B
19. C
20. D
21. A
22. B
23. C
24. 5
25. 2

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