CALIFORNIA STATISTICS · FINAL EXAM · 50 QUESTIONS

Final Exam — 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 median of 4, 8, 12, 16, 20, 24 is**

- A 12
- B 16
- C 14
- D 20

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2 **A fair six sided die is rolled. The probability of a 5 is**

- **A** $\frac{1}{6}$
- **B** $\frac{1}{2}$
- **C** $\frac{5}{6}$
- **D** $\frac{1}{3}$

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3 **A 95% confidence interval for a mean is (20, 30). The margin of error is**

- **A** 10
- **B** 5
- **C** 25
- **D** 2.5

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4 **A regression line is $\hat{y} = 5 + 2x$. For $x = 10$, the predicted y is**

- **A** 20
- **B** 7
- **C** 15
- **D** 25

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5 **The mean of 6, 10, 14, 18, 22 is**

- **A** 14
- **B** 12
- **C** 18
- **D** 16

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6 **A fair six sided die is rolled. The probability of an even number is**

- **A** $\frac{1}{2}$
- **B** $\frac{1}{3}$
- **C** $\frac{1}{6}$
- **D** $\frac{2}{3}$

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7 **The standard error of a sample proportion is $\sqrt{p(1-p)/n}$. For p = 0.5, n = 100, it is**

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

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8 **A lurking variable is**

- A measured in the study
- B the response variable
- C the explanatory variable
- D not measured but affecting the response

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9 **The mass of each student in kilograms is an example of**

- A Categorical data
- B A parameter
- C Quantitative data
- D A bias

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10 **A card is drawn from a standard deck. The probability it is an ace is**

- **A** $\frac{1}{13}$
- **B** $\frac{4}{13}$
- **C** $\frac{1}{52}$
- **D** $\frac{1}{4}$

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11 **A p-value of 0.03 at significance level 0.05 means we**

- **A** need no decision
- **B** reject the null
- **C** accept the null as true
- **D** fail to reject the null

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12 **A scatterplot with points falling from left to right shows a**

A perfect causation

B positive association

C no association

D negative association

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13 **A boxplot shows the median and the quartiles of a data set The whiskers in the plot extend toward the**

A First quartile only

B Mean only

C Minimum and maximum values

D Zero only

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14 **A card is drawn from a standard deck. The probability it is a heart is**

- **A** $\frac{1}{13}$
- **B** $\frac{1}{52}$
- **C** $\frac{1}{2}$
- **D** $\frac{1}{4}$

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15 **A Type II error is**

- **A** rejecting a true null
- **B** failing to reject a false null
- **C** a calculation mistake
- **D** using the wrong graph

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16 **An observational study observes subjects without**

A collecting data

B using a sample

C assigning treatments

D measuring outcomes

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17 **Collecting data from a part of a population is called a**

A Sample

B Experiment

C Parameter

D Census

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18 **A binomial experiment has n = 10 and p = 0.4. The mean number of successes is**

- A 6
- B 4
- C 10
- D 2.4

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19 **A 90% confidence interval is (100, 120). The point estimate is**

- A 20
- B 110
- C 100
- D 120

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20 **Extrapolation means predicting outside the range of the**

- A confidence level
- B observed x values
- C sample size
- D observed y values only

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21 **In a class of 50 students, 20 prefer swimming. What is the relative frequency of swimming as a decimal?**

ANSWER _____

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22 **The sum of probabilities in a valid probability distribution is**

A 0

B 1

C 2

D 0.5

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23 **The standard error for σ = 30, n = 25, is**

ANSWER _____

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24 **In a two way table with counts 12 and 28 in a row, the row total is**

ANSWER _____

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25 **In a normal distribution, about what percent of values lie within two standard deviations of the mean?**

A 50%

B 99.7%

C 95%

D 68%

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26 **A binomial experiment has n = 25 and p = 0.2. The mean, is**

ANSWER _____

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27 **A confidence interval that contains the null value generally means we**

- A fail to reject the null
- B prove the alternative
- C stop the study
- D reject the null

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28 **A regression line is $\hat{y} = 20 - 3x$. For $x = 4$, the predicted y is**

- A 32
- B 8
- C 23
- D 12

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29 **A voluntary response survey posted online is most likely to suffer from**

A No bias

B Perfect accuracy

C Random error only

D Self selection bias

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30 **The Law of Large Numbers says that as trials increase, the relative frequency tends toward the**

A maximum

B true probability

C mean of the sample

D sample size

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31 **A 95% confidence interval is (40, 60). The point estimate is**

- A 20
- B 60
- C 40
- D 50

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32 **A regression line is $\hat{y} = 50 - 2x$. For $x = 10$, the predicted y, is**

ANSWER _____

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33 **The population variance of 3, 5, 7, 9, 11 is**

- A 8
- B 6
- C 10
- D 4

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34 **A fair six sided die is rolled. The probability of a number greater than 4 is**

- A $\frac{1}{2}$
- B $\frac{1}{6}$
- C $\frac{2}{3}$
- D $\frac{1}{3}$

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35 **A p-value of 0.01 at level 0.05 means we**

A prove the null

B reject the null

C prove the alternative

D fail to reject the null

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36 **Observed y = 42, predicted y = 38. The residual is**

ANSWER _____

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37 **In a normal distribution with mean 200 and standard deviation 20, a value 1 standard deviation above the mean is**

- A 240
- B 200
- C 180
- D 220

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38 **If P(A) = 0.5, P(B) = 0.4, and P(A and B) = 0.2, then P(A or B) is**

- A 0.3
- B 1.1
- C 0.9
- D 0.7

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39 **A sample mean is 70 with margin of error 6. The interval is**

- A (64, 70)
- B (70, 76)
- C (64, 76)
- D (58, 82)

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40 **A regression line is $\hat{y} = 40 - 5x$. For $x = 3$, the predicted y is**

- A 37
- B 43
- C 55
- D 25

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41 **In a normal distribution with mean 50 and standard deviation 5, a value 2 standard deviations below the mean is**

- A 45
- B 60
- C 40
- D 55

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42 **A binomial experiment has n = 50 and p = 0.3. The mean is**

- A 10.5
- B 15
- C 35
- D 50

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43 **A sample proportion is 0.30 with margin of error 0.04. The upper end of the interval is**

ANSWER _____

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44 **Replication in an experiment means**

A using many subjects or repeating treatments

B hiding the treatment

C using one subject only

D removing the control group

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45 **The median of 9, 13, 17, 21, 25 is**

ANSWER _____

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46 **Two independent events have probabilities 0.4 and 0.5. The probability both occur is**

ANSWER

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47 **A confidence interval estimates a**

A population parameter

B sample size

C sample statistic exactly

D p-value

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48 **A regression line is $\hat{y} = 12 + 2x$. For $x = 9$, the predicted y, is**

ANSWER

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49 **A convenience sample is most likely to be**

A An experiment

B Perfectly representative

C Biased

D A census

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50 **Events are independent if knowing one does not change the probability of the**

A total

B mean

C sample

D other

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ANSWER KEY

1.	C	**18.**	B	**35.**	B
2.	A	**19.**	B	**36.**	4
3.	B	**20.**	B	**37.**	D
4.	D	**21.**	0.4	**38.**	D
5.	A	**22.**	B	**39.**	C
6.	A	**23.**	6	**40.**	D
7.	C	**24.**	40	**41.**	C
8.	D	**25.**	C	**42.**	B
9.	C	**26.**	5	**43.**	0.34
10.	A	**27.**	A	**44.**	A
11.	B	**28.**	B	**45.**	17
12.	D	**29.**	D	**46.**	0.2
13.	C	**30.**	B	**47.**	A
14.	D	**31.**	D	**48.**	30
15.	B	**32.**	30	**49.**	C
16.	C	**33.**	A	**50.**	D
17.	A	**34.**	D		

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