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36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E

PRACTICE QUESTIONS

DANTES Eligible Military Service Member (DSST)

SN450

Principals of Statistics

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for DANTES Eligible Military Service Member (DSST) **SN450**, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **SN450**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A dataset contains the values 2, 4, 4, 6, 8, 10. Which of the following correctly identifies the median of this dataset?

- ☐ A 4
- ☒ B 5
- ☐ C 5.67
- ☐ D 6

ANSWER B

WHY For an even number of ordered observations, the median is the average of the two middle values. The middle two values are 4 and 6, so the median is $(4 + 6)/2 = 5$.

QUESTION 2

SINGLE CHOICE

Two fair six-sided dice are rolled. What is the probability that the sum of the two dice equals 7?

- ☐ A $1/12$
- ☐ B $1/9$
- ☒ C $1/6$
- ☐ D $1/3$

ANSWER C

WHY There are 36 equally likely outcomes when rolling two dice. The combinations that sum to 7 are (1,6), (2,5), (3,4), (4,3), (5,2), and (6,1), giving 6 favorable outcomes. The probability is $6/36 = 1/6$.

QUESTION 3

SINGLE CHOICE

In hypothesis testing, a Type I error occurs when:

- ☒ **A** The null hypothesis is rejected when it is actually true.
- ☐ **B** The null hypothesis is not rejected when it is actually false.
- ☐ **C** The alternative hypothesis is rejected when it is actually true.
- ☐ **D** The sample size is too small to detect a true effect.

ANSWER A

WHY A Type I error is the rejection of a true null hypothesis, also known as a false positive. A Type II error (option B) is failing to reject a false null hypothesis.

QUESTION 4

SINGLE CHOICE

For a standard normal distribution, approximately what percentage of observations fall within one standard deviation of the mean?

- ☐ **A** 50%
- ☒ **B** 68%
- ☐ **C** 95%
- ☐ **D** 99.7%

ANSWER B

WHY By the empirical (68-95-99.7) rule, approximately 68% of observations in a normal distribution lie within one standard deviation of the mean, 95% within two, and 99.7% within three.

QUESTION 5

SINGLE CHOICE

Which measure of dispersion is most affected by extreme values (outliers) in a dataset?

- ☒ **A** Range
- ☐ B Interquartile range
- ☐ C Median
- ☐ D Mode

ANSWER A

WHY The range is calculated as the maximum value minus the minimum value, so a single outlier on either end will directly change the range. The interquartile range is based on the middle 50% of the data and is therefore more resistant to outliers.

QUESTION 6

SINGLE CHOICE

A correlation coefficient of $r = -0.92$ between two variables indicates that:

- ☐ A The variables have a weak positive relationship.
- ☒ **B The variables have a strong negative relationship.**
- ☐ C One variable causes the other.
- ☐ D The relationship is not statistically significant.

ANSWER B

WHY The correlation coefficient r ranges from -1 to $+1$. A value of -0.92 is close to -1 , indicating a strong negative (inverse) linear relationship. Correlation does not imply causation, regardless of strength.

QUESTION 7 SINGLE CHOICE

A researcher divides a population into subgroups based on income level and then randomly selects individuals from each subgroup in proportion to its size. This sampling method is called:

- ☐ A Simple random sampling
- ☐ B Systematic sampling
- ☒ C Stratified sampling
- ☐ D Cluster sampling

ANSWER C

WHY Stratified sampling involves dividing the population into homogeneous subgroups (strata) and then randomly sampling from each stratum. Proportional allocation from each subgroup is a common feature of this method.

QUESTION 8 SINGLE CHOICE

If events A and B are independent, which of the following must be true?

- ☐ A $P(A \text{ and } B) = P(A) + P(B)$
- ☒ B $P(A \text{ and } B) = P(A) \times P(B)$
- ☐ C $P(A|B) = P(A) + P(B)$
- ☐ D $P(B|A) = 0$

ANSWER B

WHY For independent events, the probability of both occurring is the product of their individual probabilities: $P(A \text{ and } B) = P(A) \times P(B)$. Equivalently, $P(A|B) = P(A)$ and $P(B|A) = P(B)$.

QUESTION 9

MULTIPLE CHOICE

Which of the following are properties of a 95% confidence interval for a population mean? (Choose two.)

- ☒ **A** It is constructed around a sample mean.
- ☐ **B** It has a 95% probability of containing the true population mean.
- ☒ **C** Its width decreases as the sample size increases.
- ☐ **D** It always contains 95% of the individual observations in the population.

ANSWER A • C

WHY A confidence interval is built around a point estimate (typically the sample mean), so (A) is correct. As sample size increases, the standard error decreases and the interval becomes narrower, so (C) is correct. Option B is a common misinterpretation; the correct interpretation is that 95% of such intervals constructed from repeated samples will contain the true population mean. Option D describes the range that contains 95% of individual observations, not a confidence interval.