Multiple choice questions - Statistical inference

Year: University Year 1 · 10

Question 1 The standard error of $\bar{X}$ is

- ◯ **A.** σ
- ◯ **B.** $\sigma/\sqrt{n}$
- ◯ **C.** σ^2/n
- ◯ **D.** $\sigma\sqrt{n}$

Question 2 The sample variance divides by

- ◯ **A.** n
- ◯ **B.** $n-1$
- ◯ **C.** $n+1$
- ◯ **D.** $\sqrt{n}$

Question 3 A p-value below α means

- ◯ **A.** reject H0
- ◯ **B.** accept H0
- ◯ **C.** H0 is certainly true
- ◯ **D.** the test is invalid

Question 4 A Type I error is

- ◯ **A.** rejecting a true H0
- ◯ **B.** accepting a false H0
- ◯ **C.** a calculation error
- ◯ **D.** a biased sample

Question 5 The 95% z critical value (two-tailed) is

- ◯ **A.** 1.645
- ◯ **B.** 1.96
- ◯ **C.** 2.58
- ◯ **D.** 1.28

Question 6 Quadrupling the sample size, the margin of error is

- ◯ **A.** halved
- ◯ **B.** doubled
- ◯ **C.** unchanged

- ◯ **D.** quartered

Question 7 A chi-squared test of independence on a 3×4 table has d.f.

- ◯ **A.** 12
- ◯ **B.** 6
- ◯ **C.** 7
- ◯ **D.** 11

Question 8 The central limit theorem says $\bar{X}$ is approximately normal for

- ◯ **A.** small n only
- ◯ **B.** large n
- ◯ **C.** normal populations only
- ◯ **D.** n=1

Question 9 The correlation coefficient satisfies

- ◯ **A.** $0 \leq r \leq 1$
- ◯ **B.** $-1 \leq r \leq 1$
- ◯ **C.** $r > 0$
- ◯ **D.** $|r| > 1$

Question 10 A large p-value means

- ◯ **A.** H0 is proved
- ◯ **B.** little evidence against H0
- ◯ **C.** H1 is true
- ◯ **D.** reject H0

Answer grid - Statistical inference

Year: University Year 1

Question	Answer	Explanation
1	**B**	Standard deviation of the sample mean.
2	**B**	Unbiased estimator.
3	**A**	Evidence against H0.
4	**A**	Probability α.
5	**B**	Standard value.
6	**A**	$1/\sqrt{n}$.
7	**B**	$(3-1)(4-1)$.
8	**B**	Regardless of shape.
9	**B**	Bounded by ± 1.
10	**B**	Not enough evidence.