

Statistics MCQ

Q1: A researcher asked people how likely they would be to purchase an environmentally friendly alternative to their favourite product, even if it was more expensive. Possible scores ranged from 1 to 100 and the mean rating was 61. Which of the following statements is correct?

- a) The probability of giving a rating of 61 or higher is statistically significant
- b) 61 must be the most frequently given rating
- c) The value of 61 was unaffected by extremely high or low ratings
- d) Assuming the ratings were normally distributed, 61 represents the centre point of that distribution

Q2: A researcher asked 30 Love Island contestants to rate their own attractiveness. Possible scores ranged from 1 to 100. The mean score was 72 with a standard deviation of 3. What can we correctly infer from the standard deviation?

- a) The mean of 72 is an accurate summary of the data
- b) There was a lot of variability in attractiveness scores
- c) A different sample of Love island contestants are highly likely to rate themselves very differently to 72
- d) If every Love island contestant rated their own attractiveness, the mean rating would be quite different to 72

Q3: During the Six Nations tournament, a group of rugby fans were asked to rate how strongly they identified with their national team on a scale of 1 to 20. The estimate of the population mean was 10 and a 95% confidence interval around that estimate was calculated to be 9.02 to 10.98. Which of the following statements is true?

- a) The probability of the population mean falling between 9.02 to 10.98 is either 0 or 1, but we can't know which.
- b) There is a lot of uncertainty around the estimate of the true population mean
- c) The population mean is likely to be zero
- d) The population mean is between 9.02 and 10.98

Q4: The tables below show the SPSS output from a linear model that predicts cognitive functioning from tea drinking. What can we infer from the table?

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	49.218	.764		64.382
	Number of Cups of Tea Drunk Per Day	.460	.221	.078	2.081

a. Dependent Variable: Cognitive Function Score (Max = 80)

- a) For every cup of tea drunk per day, cognitive function improves by 0.460 units
- b) When the value of tea drinking is 0.460, the value of cognitive function is 49.218
- c) The probability of cognitive function improving as tea drinking increases is .038
- d) The correlation between cognitive function and tea drinking is 0.460.

Q5: A researcher randomly sampled people dining in two restaurants over the course of a month. One of the restaurants was Michelin-starred and the other served fast food. The researcher asked diners to rate how satisfied they were with their meals from 1 to 5 (1 = "very dissatisfied", 5 = "very satisfied") and compared the groups' scores.

The group that dined in the Michelin-starred restaurant gave a mean rating of 3 with a standard error of 0.3. The group that dined in the fast food restaurant gave a mean rating of 3 with a standard error of 0.6.

Which of the following statements is correct?

- a) If the study was repeated with different samples of diners, the similarity between sample means from each restaurant would be higher for the Michelin-starred restaurant than the fast food restaurant.
- b) The confidence interval around the estimate of the population mean will be wider for the group that dined in the Michelin-starred restaurant.
- c) The sampling variation is greater for the Michelin-starred restaurant.
- d) People were significantly more satisfied with their meals in the Michelin-starred restaurant