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Begonnen am Mittwoch, 22. Februar 2023, 22:06**Status** Beendet**Beendet am** Mittwoch, 22. Februar 2023, 22:20**Verbrauchte Zeit** 14 Minuten 1 Sekunde**Bewertung** 6 von 10 (60%)**Feedback** Congratulations! You have successfully passed the test!**Frage 1**

Vollständig

Erreichte
Punkte 1 von 1

If the standard deviation of a set of observations is zero, we can conclude

- ☐ a. that there is no relationship between the observations.
- ☐ b. that a mistake in arithmetic has been made.
- ☒ c. that all observations are the same value.
- ☐ d. that the average value is 0.

Frage 2

Vollständig

Erreichte
Punkte 1 von 1

Populations P_1 and P_2 are normally distributed and have identical means. However, the standard deviation of P_1 is twice the standard deviation of P_2 . What can be said about the percentage of observations falling within two standard deviations of the mean for each population?

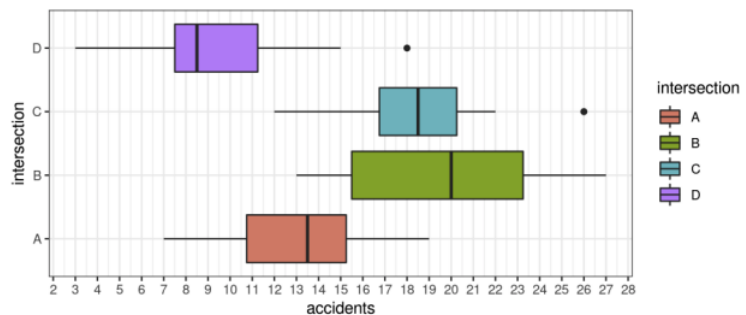
- ☒ a. The percentages are identical.
- ☐ b. The percentage for P_1 is twice the percentage for P_2 .
- ☐ c. The percentage for P_1 is greater, but not twice as great, as the percentage for P_2 .
- ☐ d. The percentage for P_2 is greater, but not twice as great, as the percentage for P_1 .

Frage 3

Vollständig

Erreichte
Punkte 1 von 1

Data on the number of yearly accidents were collected from four intersections (A-D) over a 20 year period. The corresponding boxplots are given below.

Which of the following statements is **false**?

- ☒ a. During at least 75% of years, intersection D had viewer fewer accidents than the lowest 25% of years at intersection A.
- ☐ b. All of the accidents totals at intersection D were lower than the median number of accidents at intersection B.
- ☐ c. During at least 15 years, fewer than 12 accidents occurred at intersection D.
- ☐ d. The maximum number accidents that occurred in a single intersection was 27.

Frage 4

Vollständig

Erreichte
Punkte 0 von 1

Regarding the data

11, 21, 22, 9, 3, 5

it holds

- ☐ a. 8 is a median
- ☐ b. 22 is a 5/6-quantile
- ☒ c. the 1.-quartile is not unique
- ☐ d. the set of 50%-quantiles is [11, 21]

Frage 5

Vollständig

Erreichte
Punkte 1 von 1

For (real-valued) data x_1, \dots, x_n (with $n \geq 2$) it always holds that

- ☐ a. their empirical median is unique if the sample size is even
- ☒ b. both the empirical standard deviation and the empirical variance are not negative
- ☐ c. the empirical median is not equal to the empirical mean if the data is sampled from an asymmetric distribution
- ☐ d. both their empirical variance and their interquartile range are positive

Frage 6

Vollständig

Erreichte
Punkte 1 von 1

If the standard deviation of a set of observations is 0, we can conclude

- ☐ a. that there is no relationship between the observations.
- ☒ b. that all observations are the same value.
- ☐ c. that a mistake in arithmetic has been made.
- ☐ d. that the average value is 0.

Frage 7

Vollständig

Erreichte
Punkte 0 von 1

Which one of the following is a true statement?

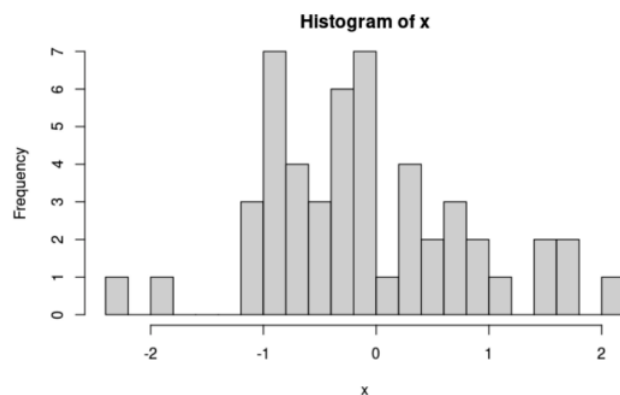
- ☐ a. Statistics from smaller samples have less variability.
- ☐ b. The larger the sample, the larger the spread in the sampling distribution.
- ☐ c. Provided that the population size is significantly greater than the sample size, the spread of the sampling distribution does not depend on the population size.
- ☒ d. Sample parameters are used to make inferences about population statistics.

Frage 8

Vollständig

Erreichte
Punkte 0 von 1

Consider the following histogram of a data set consisting of 50 observations. Which one of the following statements is **true**?



- ☐ a. The standard deviation of these data is at least 1.5.
- ☐ b. The sample mean is a bad summary of these data.
- ☒ c. The data are asymmetric.
- ☐ d. The data are approximately normal.

Frage 9

Vollständig

Erreichte
Punkte 0 von 1

Which one of the following is an **incorrect** statement?

- ☐ a. When n is large, the sampling distribution of \bar{x} is approximately normal even if the population is not normally distributed.
- ☐ b. The sampling distribution of \bar{x} has mean equal to the population mean μ even if the population is not normally distributed.
- ☐ c. The larger the value of the sample size n , the closer the standard deviation of the sampling distribution of \bar{x} is to the standard deviation of the population.
- ☒ d. The sampling distribution of \bar{x} has standard deviation σ/\sqrt{n} even if the population is not normally distributed.

Frage **10**

Vollständig

Erreichte

Punkte 1 von 1

Which of the following are true statements?

I If the sample has variance zero, the variance of the population is also zero.

II If the population has variance zero, the variance of the sample is also zero.

III If the sample has variance zero, the sample mean and the sample median are equal.

- ☐ a. I and II
- ☐ b. None of the above gives the complete set of true responses.
- ☒ c. II and II
- ☐ d. I and III

[◀ Test 6 - Review Part 1](#)

Direkt zu:

[Test 8 - Basic ideas of hypothesis testing ▶](#)