

[Zur LVA in TISS](#)
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Begonnen am Donnerstag, 23. Februar 2023, 14:50**Status** Beendet**Beendet am** Donnerstag, 23. Februar 2023, 15:04**Verbrauchte Zeit** 14 Minuten 12 Sekunden**Bewertung** 6 von 10 (60%)**Feedback** Congratulations! You have successfully passed the test!**Frage 1**

Vollständig

Erreichte
Punkte 0 von 1

Which of the following is a true statement?

- ☐ a. The area under the standard normal curve between 0 and 2 is half the area between -2 and 2.
- ☐ b. For the standard normal curve, the interquartile range is approximately 3.
- ☐ c. The area under the standard normal curve between 0 and 2 is twice the area between 0 and 1.
- ☒ d. For the standard normal curve, the area to the left of 0.1 is the same as the area to the right of 0.9.

Frage 2

Vollständig

Erreichte
Punkte 0 von 1For the P -value of a statistical test of significance level α it always holds true that

- ☐ a. $P \leq \alpha$, if the null hypothesis was not rejected
- ☐ b. $P \geq 0$, if the null hypothesis was rejected
- ☐ c. $P > 2\alpha$, if the null hypothesis was rejected
- ☒ d. $P \leq \alpha/2$, if the null hypothesis was rejected

Frage 3

Vollständig

Erreichte
Punkte 1 von 1Suppose $H_0 : p = 0.4$, and the power of the test for the alternative hypothesis $p = 0.35$ is 0.75. Which of the following is a valid conclusion?

- ☒ a. If the alternative $p = 0.35$ is true, the probability of failing to reject H_0 is 0.25.
- ☐ b. The probability of committing a Type I error is 0.05.
- ☐ c. The probability of committing a Type II error is 0.65.
- ☐ d. If the null hypothesis is false, the probability of failing to reject it is 0.65.

Frage 4

Vollständig

Erreichte
Punkte 1 von 1Which of the following is a **true** statement?

- ☐ a. The P -value of a test is the probability of obtaining a result as extreme (or more extreme) as the one obtained assuming the null hypothesis is false.
- ☒ b. The alternative hypothesis is one-sided if there is interest in deviations from the null hypothesis in only one direction.
- ☐ c. If the P -value for a test is 0.015, the probability that the null hypothesis is true is 0.015.
- ☐ d. The larger the P -value, the more evidence there is against the null hypothesis.

Frage 5

Vollständig

Erreichte
Punkte 1 von 1

A drug company would like to show that their new drug is better than the currently used one (the status-quo). In the hypothesis testing framework if they make a Type II error then what is the practical consequence of the error?

- ☒ a. They incorrectly conclude that their drug is no better when really it is.
- ☐ b. Without data from an actual hypothesis test, it is not possible to interpret the consequence of the Type II error.
- ☐ c. They incorrectly claim that their drug is better when really it is not.
- ☐ d. They correctly claim that their drug is better when it really is better.

Frage 6

Vollständig

Erreichte
Punkte 0 von 1Which of the following is a **true** statement?

- ☒ a. The alternative hypothesis is stated in terms of a sample statistic.
- ☐ b. Hypothesis tests are designed to measure the strength of evidence against the null hypothesis.
- ☐ c. A well-planned hypothesis test should result in a statement either that the null hypothesis is true or that it is false.
- ☐ d. When the null hypothesis is rejected, it is because it is not true.

Frage 7

Vollständig

Erreichte
Punkte 1 von 1

If a test of a hypothesis has a type I error probability of 0.01, we mean

- ☐ a. if the null hypothesis is false, we don't reject it 1% of the time.
- ☒ b. if the null hypothesis is true, we reject it 1% of the time.
- ☐ c. if the null hypothesis is false, we reject it 1% of the time.
- ☐ d. if the null hypothesis is true, we don't reject it 1% of the time.

Frage 8

Vollständig

Erreichte
Punkte 1 von 1Choosing a smaller level of significance, that is, a smaller α -risk, results in

- ☒ a. a higher risk of Type II error and lower power.
- ☐ b. a lower risk of Type II error and higher power.
- ☐ c. a higher risk of Type II error and higher power.
- ☐ d. a lower risk of Type II error and lower power.

Frage 9

Vollständig

Erreichte
Punkte 0 von 1We plan to perform a hypothesis test with a level of significance of $\alpha = 0.05$. What is the effect on the probability of committing a Type I error if the sample size is increased?

- ☒ a. The probability of committing a Type I error decreases.
- ☐ b. The probability of committing a Type I error increases.
- ☐ c. The probability of committing a Type I error is unchanged.
- ☐ d. The effect cannot be determined without knowing the relevant standard deviation.

Frage 10

Vollständig

Erreichte
Punkte 1 von 1

A company manufactures a synthetic rubber (jumping) bungee cord with a braided covering of natural rubber and a minimum breaking strength of 450 kg. If the mean breaking strength of a sample drops below a specified level, the production process is halted and the machinery inspected. Which of the following would result from a Type I error?

- ☐ a. Halting the production process when the breaking strength is below the specified level.
- ☐ b. Halting the production process when too many cords break.
- ☒ c. Halting the production process when the breaking strength is within specifications.
- ☐ d. None of the options given.

[◀ Test 7 - Sampling and Descriptive statistics](#)

Direkt zu:

[Test 9 - One sample z-test, one-sample t-test, two-sample t-test, test for proportions ▶](#)