

# PALS0045 Week 1 Quiz

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This Quiz is designed to test your understanding of the learning objectives from the lecture in Week 1.

Complete each question and press submit to check your answers.

Q1:

**What is the standard error of the mean?**

- ☒ The standard deviation of the sampling distribution of the mean ✓
- ☐ The standard deviation of the standard normal distribution ✗
- ☐ The amount the scores in the population vary from the mean ✗
- ☐ The difference between the mean of your first sample and the mean of your second sample ✗

Correct!

Q2:

**What percentage of 95% confidence intervals for the mean do not contain the population mean?**

- ☐ 95% ✗
- ☒ 5% ✓
- ☐ 2.5% ✗
- ☐ cannot say ✗

Correct!

Q3:

**How does sample size affect the probability that a confidence interval will contain the population mean?**

- ☐ The larger the sample size, the higher the probability the interval will contain the population mean ✗
- ☐ The larger the sample size, the lower the probability the interval will contain the population mean ✗
- ☒ Sample size has no effect on the probability the interval will contain the population mean ✓

Correct!

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Larger sample sizes decrease the width of confidence intervals but leave the probability that the interval contains the population mean unchanged.

Q4:

**It has been shown many times that on a certain memory test, recognition is substantially better than recall. However, the probability value for the data from your sample was .12, so you were unable to reject the null hypothesis that recall and recognition produce the same results. What type of error did you make?**

- ☐ type I ✗
- ☒ type II ✓

Correct!

In this example, there is really a difference in the population between recognition and recall, but you did not find a significant difference in your sample. Failing to reject a false null hypothesis is a Type II error.

Q5:

**In the population, there is no difference between men and women on a certain test. However, you found a difference in your sample. The probability value for the data was .03, so you rejected the null hypothesis. What type of error did you make?**

- ☒ type I ✓
- ☐ type II ✗

Correct!

Here there is no true difference between men and women in the population, but there was a difference in your sample.

Q6:

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**As the alpha level gets lower, which error rate also gets lower?**

- ☒ type I ✓
- ☐ type II ✗

Correct!

alpha reflects the probability of obtaining that value if the null hypothesis were true. So the lower the alpha level, the more unusual that value would be if there were no effect.

Q7:

**You have just analyzed the results from your experiment, and you calculated  $p = .13$ . Which conclusion can you draw?**

- ☐ You reject the null hypothesis ✗
- ☐ You accept the null hypothesis ✗
- ☒ You fail to reject the null hypothesis ✓
- ☐ You accept the alternative hypothesis ✗

Correct!

Q8:

**Select all that apply. The probability value below which the null hypothesis is rejected is also called the...**

- ☐ key probability ✗
- ☒ significance level ✓
- ☒ alpha level ✓
- ☐ focal value ✗

Correct!

Q9:

**A low probability value indicates a large effect**

- ☐ true ✗

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☒ false ✓

Correct!

A low p-value indicates that the sample estimate (or one more extreme) would be very unlikely if the null hypothesis were true. A low probability value can even occur with small effect sizes, particularly if the sample size is large. Effect size gives a better indicator of practical significance.