

Review for Exam 3 (Chapters 8, 9, 10, 11)

Chapter 8

Key terms

- Null hypothesis
- Alternative hypothesis
- Type I error
- Type II error
- Alpha level
- Critical region
- Level of significance
- Statistically significant

Understand the logic of hypothesis testing

Be able to state the hypotheses and locate the critical region

Be able to conduct a hypothesis test using a z-score statistic and make a statistical decision

Be able to define and differentiate between Type I and Type II errors

Be able to compute Cohen's d and understand the purpose of measuring effect size and Power

Conduct a one-tailed (directional) test and state a directional hypothesis

Chapter 9

Key terms

- Estimated standard error
- t statistic
- degrees of freedom
- percentage of variance accounted for (r^2)

Understand when a t statistic is used (instead of a z-score) for hypothesis testing)

Perform a hypothesis test using the t statistic.

Be able to compute sample means and variance and estimated error for sample mean

Be able to compute Cohen's d and percentage of variance accounted for to measure effect size

Chapter 10

Key terms

- Independent-measures research design
- Between-subject research design
- Pooled variance
- Homogeneity of variance

Understand the structure of a research study that produces data appropriate for an

independent-measures t hypothesis test
Be able to use the independent-measures t statistic to test hypotheses about the mean difference between two populations or between two treatment conditions.
Compute Cohen's d or r^2 to evaluate the magnitude of the mean difference

Chapter 11

Key terms

- Repeated-measures design
- Within-subjects design
- Matched-subjects design
- Difference scores
- Estimated standard error for M_D
- Carryover effects
- Progressive error

Understand the structure of a research study that produces data appropriate for a repeated-measures t hypothesis test
Be able to use the repeated measures t statistic to test hypotheses about the mean difference between two treatment conditions.
Compute Cohen's d or r^2 to evaluate the magnitude of the mean difference
Understand the advantages and disadvantages of repeated-measures studies compared to independent-measures studies, and recognize the situations where each type of study is appropriate