Study Guide

JP

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Things to Know

* all the formulas for z-test, one-sample t-test, independent-samples t-test, paired-samples t-test, one-way anova
* know how to calculate for all the different statistical tests above (except post-hoc tests for ANOVA)
* know how to use all of the tables covered so far (z, t, F, q)
* know how to interpret statistically significant/nonsignificant findings
* know what test to calculate given some context
* know what statistically significant/nonsignificant findings mean
* what is an inferential statistic
* know what the assumptions are for the tests we’ve covered (normally distributed DV, interval/ratio score)
* know difference between nonparametric test and parametric test
* know how to formulate a null and research/alternative hypothesis
* know the difference between the two hypotheses
* know what a one-tailed and two-tailed test are
* from a given hypothesis, tell me whether it would be a one-tailed or two-tailed test
* know alphas that correspond to a one-tailed or two-tailed test
* know what regions of rejection, critical values, and alphas are
* know the critical values for a z-test
* know what type I and type II errors are and the difference between the two
* know what power is and how to improve it
* know the differences between a z-test and a one-sample t-test
* know the difference between all the different t-tests, especially paired-samples and independent-samples t-tests
* know the differences between all the different distributions covered so far (z, t, F, sampling, differences between means, raw)
* know what confidence intervals are (I won’t ask for CI calculations though)
* know what point estimations are
* know what interval estimations are
* be familiar with what bootstrapping is
* know how to write out each test statistic finding (z, t, F)
* know the differences between between-subjects/group design and within-subjects/group design
* know what homogeneity of variance is
* know what test we use to check for homogeneity of variance
  + know the difference between a typical t-test (student’s t-test) and a Welsh t-test
* know what pooled variance is and what test it is used for
* know what the standard error of the difference is
* know what effect sizes are
* know the magnitudes of effect size
* know how to calculate effect sizes for t- and F-tests (cohen’s d, hedges’ g, proportion of variance [for F-test])
* know how to calculate degrees of freedom
* know the different types of paired-samples t-test
* know what a factor and a level are
  + expect examples of a factor with several levels where you will state which are which
* know what k is
* know the difference between an independent samples t-test and a one-way ANOVA
* know what the assumptions of an ANOVA are
* know why it is not okay to run several t-tests compared to an ANOVA
* know null and alternative/research hypotheses for ANOVA
* know how to calculate a Bonferroni Correction
* know the correction for unequal sample sizes
* know what and how to calculate sum of squares, mean squares, degrees of freedom, F statistic for ANOVA
* know what the grand mean is
* know what a F-statistic tells us and what it doesn’t tell us
* know what Tukey HSD is
* know what eta squared is