

Questions about Test 3

Often on the day before a test I take questions from the class. That's a little harder to do online, so let's use this document to gather up questions. Put your question in one of the sections below. If you see a question from someone else that also interests you, add your initials. If you get your question figured out, come back and remove your initials

Logistics

1. How do I ask a question? [rjp]
 - o Answer: type your question in the right section and add your initials at the end
 - o If you like a question some else posts, add your initials. If I see lots of initials, I'll know it is a question lots of people are interested in.
 - o If you don't know where to put your question, put it in "other stuff" and I can move it later, if needed.

Statistical Inference in general

p-values, confidence intervals, SE, randomization, bootstrap, etc.

1. *When do we use `qnorm()` v. `qt()`? MH*
2. *When creating a confidence interval with SE formulas using `msummary()`, how do we know what number to use for the degrees of freedom when calculating the critical value using `qt()`? MH*
3. *How to find p-value using `pnorm`?*
4. *What's the relationship between p-values and confidence intervals? [AW]*
5. *How is a normal distribution different from a t-distribution? [AW] [MH]*
6. *how does one determine whether to calculate a 2-sided or a 1-sided p-value? ES*
7. *How can you tell a p value just from looking at a histogram?*
- 8.

Using SE formulas

1. *With all the different tests we have learned (1 proportion, paired, etc.) what is the best way to approach all of them?*

Chi-Squared

1. *When do we use `1-xpchisq()` v. `xpchisq`? MH*
2. *How do we interpret a X^2 test statistic? MH*
3. *could we do an overview of goodness of fit tests? why and when would we use them? ES*

ANOVA

1. *what are degrees of freedom for residuals and why is it important for us to know? ES, aw, MH*
2. *How can we use values given in an ANOVA table to fill in missing values in the table (such as in problem 5.44 from the textbook)? MH*
3. *For ANOVA tests, why is the rule of thumb that the largest standard deviation cannot be more than double the smallest when the theoretical distribution for it is based on the fact that all of the standard deviations are the same? MH*
4. *an overview of ANOVA test and when to use them?*
5. *how exactly do you construct a qq plot? what does the which 1:2 tell us? ES, MH*

Regression

1. *how exactly do you construct a qq plot? what does the which 1:2 tell us? ES, MH*

Other stuff

1. *What are the various rules for determining good sample sizes for the various tests? MH*
2. *how can one calculate the sample size if given the confidence interval and the margin of error (like in PS 17)? ES MH*
3. *From a dataset, how would we be able to tell if it follows a normal distribution pattern (whether to use codes/formulas for a normal distribution v. a t-distribution/test)? MH*
4. *Number 4 on the test info sheet*
5. *when would we take into account values from the tails when calculating zstar or tstar (like 90% confidence interval is calculated as `qnorm(0.95)`)? ES MH*
6. *$R^2 = SSM / SST$ and what it tells us (EF) MH*