

Final Policies

You should have the following items on your desk (and nothing else) during the final:

- Pen and/or pencil and/or eraser - make sure you have enough writing utensils and they are functional. You should not try to open your bag to get another pen. Have everything ready prior to the midterm.
- Scientific calculator.
- UCI Student ID card - we will come around to check your ID during the midterm.

The following items are **not** permitted during the midterm

- Scrap paper
- Watches - remaining time will be displayed on the screen.
- Cell phones - turn your cell phone off completely and put it in your bag not in your pocket.
- Laptops / Ipads/Tablets
- Graphing calculator
- Notes of any kind, books etc.
- Any note taking device or any device with internet connectivity

Note that if you use an eraser (for pen or pencil) and do not erase well, you may not receive any points if previous answer and the latest answer are visible simultaneously.

Multiple choice questions have one correct answer. Only choose one of the choices. Write your answers in the boxes provided. You should only write a single letter in each of these boxes.

For questions that are **not** multiple choice, show your work. Write your final answers in the boxes provided. You should only write numbers in these boxes. For instance if your answer is $P(A) = 0.12$ only write 0.12 inside the box.

You will have 115 minutes. You may leave the classroom if you finish early. Make sure to review your answers before leaving.

You may not start the final until you are prompted to start. Just write your name and student ID number and wait for the prompt to start. Once you begin make sure to write your name and Student ID on top of every page.

Row:	Seat:
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1. For a normally distributed random variable, 80% of the observations are contained within _____ standard deviations of the mean. Make sure to write the final numeric answer in the box. Round to two decimal places.

2. Determine distribution Continuous Uniform
3. Determine distribution Exponential
4. Determine distribution Binom/Geom/Poisson
5. Give a ggplot with best line of fit. Ask them to fill in the blank for `geom_smooth()`

Below is an excerpt from the *The New England Journal of Medicine* from a study conducted by Hajek et. al, titled *A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy*. Use this excerpt to answer questions through.

BACKGROUND E-cigarettes are commonly used in attempts to stop smoking, but evidence is limited regarding their effectiveness as compared with that of nicotine products approved as smoking-cessation treatments.

METHODS We randomly assigned adults attending U.K. National Health Service stop-smoking services to either nicotine-replacement products of their choice, including product combinations, provided for up to 3 months, or an e-cigarette starter pack (a second-generation refillable e-cigarette with one bottle of nicotine e-liquid [18 mg per milliliter]), with a recommendation to purchase further e-liquids of the flavor and strength of their choice. Treatment included weekly behavioral support for at least 4 weeks. The primary outcome was sustained abstinence for 1 year, which was validated biochemically at the final visit. Participants who were lost to follow-up or did not provide biochemical validation were considered to not be abstinent.

6. Describe the sample.
7. What is the response variable?

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The following excerpt is also from the aforementioned study.

RESULTS

A total of 886 participants underwent randomization. The 1-year abstinence rate was 18.0% in the e-cigarette group, as compared with 9.9% in the nicotine-replacement group

For the purposes of this exam you can assume that the random assignment included division of 886 participants equally into two groups.

10. Test the hypotheses that you have written in Question 13 based on the results given above. Make a decision and a conclusion based on this hypothesis test.

11. Construct 95% confidence interval for the parameter(s) you have written in Question 13. What does this interval tell you?

12. Check whether the conditions have been met to make a theoretical inference.

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13. In the study both products were accompanied by behavioral support. Can one conclude that ecigarettes help with smoking cessation more than nicotine-replacement therapy (when accompanied by behavioral support)? Why/not?
14. You are walking in front of Slayter and run into two Denisonian friends. Friend #1 is smoking and Friend #2 is encouraging Friend #1 to quit. Friend #2 says “I think you should try ecigarettes. I have read in a study that ecigarettes will help you quit.” You want to chime in and express your opinion. You may agree or disagree with Friend #2. Write how you will carry on the conversation with these two friends. From your conversation it should be evident whether you agree or disagree and why you think so (80 words max.).