431 Homework 5 Grading Rubric

Thomas E. Love and 431 Staff

Assignment was due at noon 2018-10-19

General/Administrative

- Tell Dr. Love (in HW5-Admin) if Question 7 is not answered, even though we are not grading it.
- We are grading Questions 1-6 and 8.

Question 1 (5 points)

Award 5 points if they have a working link that meets the specifications.

- Award no more than 2 points if they don't have the author names, title and source, or if the link doesn't work.

Question 2 (5 points)

Award 5 points if they meet specifications.

- Award no more than 2 points if they don't have the authors, title, journal name and so forth, or if the link doesn't work.

Question 3 (5 points)

Full 5 points awarded requires:

- Probability statement relating to gut feeling
- Calculate odds related to gut feeling
- Motivation/explanation of gut feeling
- Complete sentences with correct spelling and grammar
- Lose 2 points for each missing piece, down to a minimum of 0

Question 4 (12 points)

2 points for each of the 6 parts below should be awarded for complete sentences with correct spelling and grammar, using quotations or paraphrasing the complete study:

1. Was the study a clinical study in humans?
2. Was the outcome of the study something directly related to human health like longer life or less disease? Was the outcome something you care about, such as living longer or feeling better
3. Was the study a randomized, controlled trial (RCT)?
4. Was it a large study - at least hundreds of patients?
5. Did the treatment have a major impact on the outcome?
6. Did predictions hold up in at least two separate groups of people?

Question 5 (5 points)

- For full credit, provide **odds** and **probability** using Bayes' Rule, responding with **complete sentences with correct spelling and grammar**.
- Lose 2 points for each missing item in bold, down to a minimum of 0.

Question 6 (8 points)

The student should reach a logical conclusion and summarize his/her reaction on whether or not this approach was accurate for assessing their initial gut feeling vs. their final conclusion after reading the article/study. No right or wrong answer, but using both logic and complete sentences are necessary. 6/8 points for good effort here. Give 5 or less if they don't manage to do all of these pieces.

Note to TAs

Please summarize the performance on Questions 1-6 in the `HW5-Notes` section for anyone scoring below 32/40 on those Questions.

Question 7 (do not grade)

We're not grading question 7, just question 8. Dr. Love felt that the additional benefit from grading that question didn't match up well with the added TA time that would be required to do so. You have a complete answer sketch for each Question.

If question 7 is not done, please mark that in the HW5-Admin section, and Dr. Love will subtract 10 points from the total score.

Question 8 (60 points)

a. What is the outcome under study? [5 points]
   - 4 points for identifying that the outcome is the medullary blood vessel surface
   - 1 point for writing the units (square mm per cubic mm)
b. What are the (in this case, two) treatment/exposure groups? [5 points]
   - 5 points for identifying that the treatment groups were "control" or "histamine shock."
   - 2 points for any reasonable attempt if a good supporting statement is written
c. Were the data collected using matched / paired samples or independent samples? [5 points]
   - 5 points for identifying that these are independent samples
   - 2 points for any reasonable attempt if a good supporting statement is written
d. Are the data a random sample from the population(s) of interest? Or is there at least a reasonable argument for generalizing from the sample to the population(s)? [5 points]
   - 2 points for writting that this is a random sample
   - 3 points for making a reasonable argument supporting the choice of sample
   - 3 points/5 for a reasonable but incorrect attempt if a good supporting statement is written
e. What is the significance level (or, the confidence level) we require here? [5 points]
   - 5 points for using either 5% significance level, or, 95% confidence level
   - No partial credit.
f. Are we doing one-tailed or two-tailed testing/confidence interval generation? [5 points]
   - 5 points for identifiying this as a two-sided approach.

- 2 points for a reasonable attempt if a good supporting statement is written
g. If we have paired samples, did pairing help (to reduce nuisance variation)?
h. If we have paired samples, what does the distribution of sample paired differences tell us about which inferential procedure to use?
    - Ignore this. Just give 5/15 points on i if they chose g and h instead, or if they answered g, h and i.
i. If we have independent samples, what does the distribution of each individual sample tell us about which inferential procedure to use? [15 points]
    - 15 points for a correct answer
    - 9 points for a reasonable attempt if a good supporting statement is written
j. Final Question [15 points]
    - 15 pts: A write up that there is a statistically significant change, with a reasonable justification i.e. CI does not include zero and/or description of appropriate p value.
    - 9 pts: Any reasonable attempt

Note to TAs

Please summarize the performance on Question 8 in the `HW5-Notes` section for anyone scoring below 48/60 on the Question.

Elements for the Class Roster

Column	Explanation
Name, ID, etc.	Student Identifying Information
HW5-Admin	Administrative notes for Dr. Love (assignment was late, no HTML file submitted, great topic for Q 1-6 or the student skipped questions, etc.)
HW5-Q1	Question 1 results (0-5 points)
HW5-Q2	Question 2 results (0-5 points)
HW5-Q3	Question 3 results (0-5 points)
HW5-Q4	Question 4 results (0-12 points)
HW5-Q5	Question 5 results (0-5 points)
HW5-Q6	Question 6 results (0-8 points)
HW5-Q8	Question 8 results (0-60 points)
HW5| Total Score on Assignment 5 (Maximum 100 points: do not penalize for Admin, Dr. Love will do that)HW5-Notes'	Notes from TAs to Students on their work (please be comprehensive, especially regarding points lost in Question 8)