Stat 272: Mini-Quiz 2

Process:
- 15-minute zoom conversation. Please sign up here for a spot Mon Nov 2 or Tues Nov 3 (the link is also on Moodle).
- Please arrive a few minutes early, and I'll let you in from the waiting room as soon as the previous conversation finishes. Please also have your camera on if at all possible.
- I'm planning to record the conversation, just to make it easier to go back and adjust scores if necessary.
- I know HW7 from Stat 272 hasn't been the only thing on your mind this week. Registration, for instance, probably consumed some energy. Thus, in the first minute or two, I want you to share what tweaks (if any) you would recommend to produce the ideal registration system.
- Next, you get to answer a question of your choosing. Pick one problem from HW7, share your screen, and walk me through your approach and your answer. Try to add some nuance and insight that goes beyond the basic answer in the key.
- Finally, I'll ask a few questions related to ideas and case studies from HW7 on logistic regression. I want this to be more of a conversation than a quiz, so it's okay if we trade ideas back and forth, and I'm willing to give hints if you need a push. I am just interested in hearing you talk about some of the core ideas surrounding logistic regression. And don't worry if you need to pause to gather thoughts at any point.
- I totally understand that an oral quiz may cause a certain level of anxiety for some, but I encourage you to look at this as an opportunity to explain how you think about Statistical Modeling. We all think about the same concepts in different ways, so please explain your thinking in a way that is authentic to you.
- This mini-quiz will represent 10% of your overall grade.

Assessment (half steps possible):
- 4 = Outstanding ability to articulate and connect logistic regression concepts, with comprehensive and thoughtful understanding of topics.
- 3 = Good ability to articulate and connect logistic regression concepts, with clear understanding of most topics.
- 2 = Limited ability to articulate and connect logistic regression concepts, with an understanding of some big ideas but also some misconceptions.
- 1 = Little to no ability to articulate and connect logistic regression concepts, with a limited understanding of big ideas and many misconceptions.
- 0 = Wait, have we talked about logistic regression??

Sample questions:

- How do odds differ from probabilities? Why are we often interested in odds when interpreting logistic regression models?
- If you have a 2-by-2 table, walk me through how you'd find an odds ratio and a relative risk. How could you produce that same odds ratio using logistic regression?
- What is the idea behind the drop in deviance test? How is the drop in deviance test analogous to the extra sum of squares F test in linear regression?
- What are good EDA plots when the response is binary and the explanatory is categorical? How about if the explanatory is numeric?
- How does one interpret a coefficient in logistic regression? What if the coefficient is negative (so the exponentiated coefficient is below 1)?
- How does one interpret a coefficient in a multiple logistic regression model?
- What is the difference in a predict function between type = "response" and type = "link"?
- How do we create a table of empirical logits with a numeric predictor? Why do we create a table of empirical logits with a numeric predictor?