In class exercise

Questions of interest:

1. Does metabolism differ by gender?
2. Do differences in gender persist when controlling for gender?
3. Do we need to account for alcoholism?
4. Write down the multiple regression model for this question. Estimate this model.
5. Write down the model as a two-sample t-test. Estimate this model.
6. Are the assumptions met? If not, what can we do instead? Interpret your results.

b)

1. What does a large Cook’s D indicate?
2. What does a large leverage indicate?
3. What does a large dfbeta indicate?
4. Fit the interaction model with gender and gastric, using “Male” as the reference category
5. Use the above diagnostics to produce some plots to identify any influential points. Use them to decide how to proceed. Decide on a model for answering question b).

c) Compare the fully interactive model for (gender gastric) to the fully interactive model for (gender gastric alcoholic) to decide if alcoholic should be included.

Outline a specific question of interest that would involve making predictions about the relationship between the explanatory variables and the response. What general modeling considerations would need to be made?