

# Homework 8

## QUANTITATIVE REASONING II

due: **3/12/25**

### 1. Free Response

**Problem 1:** What is observational data? Describe the challenges of trying to discern “what causes what” with observational data. *The Art of Statistics* chapter 4 should be helpful here.

**Problem 2:** This question is related to your project. (For non-medical school projects, please jump to the second question).

1. Run a simulation to produce the “Top decile” bottom row of Table 5.3 in the [SFFA expert report](#). Comment on the racial breakdown of this random lottery among top decile applicants to the actual racial breakdown in the admitted class. The `sample()` function will be useful.
2. Fit and interpret a regression model with your data. Please be sure to write out the model you are fitting and how it pertains to your question of interest. Remember that `glm(..., family = “binomial”)` is used for logistic regression and `lm()` is used for standard linear regression.

### 2. Computing Tutorial

**Problem 1:** Complete the appendix for [Tutorial 5](#), Activities E.1–E.2. Scroll to the bottom of the page, collect your answers, and submit them using your UATX email address.