

Homework 4

QUANTITATIVE REASONING II

due: **2/7/25**

Instructions: There are two parts to this homework. The first are free response questions on readings and course material. The second is a computing tutorial to be completed and submitted on our computing site. Please submit solutions for the first part on Populi, written professionally and saved as a pdf. Note: The first part may involve some local R computing work as well.

1. Free Response

Problem 1: Write a short paragraph on a topic you found interesting in the Prediction readings. What sparked your interest and what did you learn?

Problem 2: In this problem, you will investigate the impact of faculty attractiveness on teaching evaluation score. Yes, this has been **rigorously studied!** In your Rstudio, load in the data `beautydata.csv` and fit a simple linear regression model of `CourseEvals` on `BeautyScore`. `CourseEvals` are on the standard Likert scale, and `BeautyScore` is based on a panel of undergraduate students rating headshots of teachers. A couple suggestions for code:

```
# load in the data
beautydata = read.csv("beautydata.csv")
# fit a model, note the similarity of lm() and model_train() in our computing tutorials.
modelfit = lm(CourseEvals ~ BeautyScore, data = beautydata)
# print out a summary of the fitted model!
summary(modelfit)
# If you want to get fancy, try including extra explanatory variables on the right-hand-
side, like gender and english-speaker.
modelfit = lm(CourseEvals ~ BeautyScore + female + nonenglish, data = beautydata)
```

Interpret the coefficient estimates in the summary output.

2. Computing Tutorial

Problem 1: Complete the appendix for **Tutorial 3**, Activities C.1–C.2. Scroll to the bottom of the page, collect your answers, and submit them using your UATX email address.