

STOR 151, Spring 2024, Homework 9

Reading: course text up to Chapter 6.

Problems for solution:

1. Exercise 6.22, page 226 of course text
2. Exercise 6.28, page 228 of course text
3. Exercise 6.34, page 239 of course text
4. Exercise 6.50, page 248 of course text

Lengthy answers are not required, but you should be sure to address each part of the question in your answer.

Hand in on gradescope. If uploading as a single pdf file, please “assign” your pages.

Due time and date: 11:59 pm Thursday, April 11, 2024

Some notes on these problems:

1. About 6.34: I found the wording of this confusing. I think the intention is that the stated proportions of land cover (4.8% woods, 14.7% cultivated grass plot, etc.) would be the proportions of sites where the deer foraged if they had no preference for one type of habitat over another. Use this information to define your null hypothesis and then construct the test.
2. About 6.50: I'd like to make some changes to this question.
 - i. In part (d), I don't think the highlighted cell (the number 373) is intended to be interpreted differently from the other numbers in the table (some of the examples in the text use blue type to distinguish observed from expected values: just treat 373 as the observed value).
 - ii. In part (e), I think you should be able to verify that the chi-square statistic is 20.93 (by computing the observed and expected values for each of the 10 cells in the table): please do that.
 - iii. Part (g): could I write this a little differently. First, compute the proportion of women with depression in each of the five categories of coffee drinker. Next, comment on whether this seems to be changing according to the amount of coffee consumed. Finally, say whether you agree with the quote from the New York Times.