

# STAT 345-01: Nonparametric Statistics

## Problem Set 9

Assigned 2018 November 13  
Due 2018 November 20

**Show your work on all problems!** Be sure to give credit to any collaborators, or outside sources used in solving the problems. Note that if using an outside source to do a calculation, you should use it as a reference for the method, and actually carry out the calculation yourself; it's not sufficient to quote the results of a calculation contained in an outside source.

Please hand in parts one and two separately. If you wish to submit your part one electronically, please send it directly to the grader as pdf only.

## 1 Part One

### 1.1 Conover Problems on Chi-Squared Tests

Exercise 4.5.2

Exercise 4.5.6

### 1.2 Conover Problems on Contingency Tables

Exercise 4.2.2

Exercise 4.2.4

Problem 4.2.3

## 2 Part Two

### 2.1 Project Proposals

Submit a proposal for a computational project, including a title and a paragraph explaining the proposed project. The project should consist of either investigation and presentation of a non-parametric statistical method not covered this semester, or an in-depth numerical evaluation of an analysis or comparison of analyses which we *have* covered. Describe how you'd simulate or acquire the data, what analysis you'd perform, and what properties you'd test.

### 2.2 Checking the Chi-Squared Approximation

Download the ipython/jupyter notebook

[http://ccrg.rit.edu/~whelan/courses/2018\\_3fa\\_STAT\\_345/data/ps09.ipynb](http://ccrg.rit.edu/~whelan/courses/2018_3fa_STAT_345/data/ps09.ipynb)

using the username and password given in class, and carry out the exercises, evaluating the cells and adding commands as necessary to complete the problem according to the instructions. Submit your completed notebook as a hardcopy, or via email (either the final .ipynb file or a pdf, which can be created using nbconvert).