Homework #7

1. (15 points) Do exercise 14.8.9 on page 340. (Should use exact confidence interval and exact test in parts **a** and **c**. Please include your R commands for these parts. For part **e**, sample size calculation use the z-interval. In part e, "If the true population proportion … is as low as **0.10**, …" some student report that their book has 0.22 which is incorrect. Use 0.10 in calculation for part **e**.)

2. (10 points) Do exercise 14.8.12 on page 340.

3. (15 points) Do exercise 15.6.8 on page 366.

4. (10 points) Do exercise 15.6.12 on page 368.

5. (10 points)

Run a Monte Carlo simulation to check the coverage of the Wald interval and the Wilson interval mentioned in lecture (or see equations (1) and (4) in the reference paper at link
http://projecteuclid.org/download/pdf_1/euclid.ss/1009213286,
a pdf file is posted on Canvas also).
Simulate the 90% confidence intervals for n=50 and p=0.16.
Do 100,000 simulation runs to calculate the empirical coverages.
Do either of the intervals have correct coverage probability?
Submit your R commands and your numerical estimates of the two coverage probabilities, with your answer to above question.