

## Homework #7

1. **(15 points)** Do exercise 14.9.6 on page 346. (For part b and c, use exact confidence interval instead of the approximate z-interval formula of textbook in parts **b** and **c**. Please include your R commands for these parts.)
2. **(10 points)** Do exercises 14.9.9 on page 346.
3. **(10 points)** Do exercises 14.9.10 on page 347.
4. **(10 points)** Do exercise 14.9.13 on page 348.
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](http://projecteuclid.org/download/pdf_1/euclid.ss/1009213286), a pdf file is posted on Canvas also).  
Simulate the 90% confidence intervals for  $n=60$  and  $p=0.12$ .  
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.