

STAT 6200 — Introduction to Biostatistics
Homework 6 – Due Tuesday, November 23

Homework Guidelines:

- Homework is due by 4:30 on the due date specified above. You may turn it in at the beginning of class or place it in my mailbox in the Statistics Building. **No late homeworks will be accepted without permission granted prior to the due date.**
- Use only standard (8.5×11 inch) paper and use only one side of each sheet.
- Homework should show enough detail so that the reader can clearly understand the procedures of the solutions.
- Problems should appear in the order that they were assigned.

Assignment:

Do Review Exercises 10, 11, and 13 from Ch.11 of our text. Also do Review Exercises 4, 7, 8, 10, and 12 from Ch.14 of our text. In addition, do the following problem:

1. Repeat parts a, d, and e of Review Exercise 7 from Ch.14 using exact methods rather than methods based on the normal approximation to the binomial distribution and compare the results to those you got originally. We have only discussed normal approximation-based methods in class, because they tend to give good results when the sample size is large and because the exact methods are substantially more difficult to understand and implement. However, you can get the exact binomial-based results from Minitab fairly easily. In Minitab 14, select

Stat → Basic Statistics... → 1 Proportion...

Then click “Options...” and make sure that “Use test and interval based on normal distribution” is not checked (checking this gives the normal approximation-based results). In general, the exact results are preferable when they differ from the normal-based results; but this only happens when the sample size is relatively small.

One More Important Instruction:

- On problems 10b, 10d, and 13b, you must decide between doing a two-sample t -test with equal variances or unequal variances. In each case, conduct an F test of equal variances using significance level $\alpha = .05$ to decide which approach is more appropriate.