Stat 371-003, Homework #5 **Due 15 Oct 2008**

Homeworks are due in Wednesday lecture and will be returned the following week in the discussion section.

At the top of your homework, write the number, day, and time of the discussion section in which you are enrolled. Also include the number, day, and time of the section that you will be attending (if it is different).

From the book:

1. 6.10 (pg 194)
2. 6.19 (pg 196)
3. 7.11 (pgs 231–232)
4. 7.19 (pgs 233–234)

Using R:

5. Consider data from Hummer et al. (J. Virol. 75: 7774–7777, 2001) on ISG15 promoter activity in p53 positive and negative cells in the presence of IFN:

   `http://www.biostat.wisc.edu/%7Ekbroman/teaching/stat371/hw05data.csv`

   Use the function `t.test` in R to:

   (a) Calculate a 95% confidence interval for the average promoter activity in p53 positive cells.

   (b) Calculate a 95% confidence interval for the average promoter activity in p53 negative cells.

   (c) Calculate a 95% confidence interval for the difference between the two averages.

A few suggestions regarding R

Read in the data as follows:

```
dat <- read.csv("http://www.biostat.wisc.edu/%7Ekbroman/teaching/stat371/hw05data.csv")
```

The object `dat` will be a "data frame". The first column indicates p53 + or –. The second column indicates activity.

You can refer to the individual columns using a `$`. For example, the following pulls out the data for the activity column.

```
activity <- dat$activity
```

Pull out the activity values for the cases with p53 being "++" as follows.

```
x <- dat$activity[dat$p53=="++"]
```

Pull out the activity values for the cases with p53 being "−−" as follows.

```
y <- dat$activity[dat$p53=="--"]
```