Stat 160 Fall 2008
Assignment #8

This assignment is due at the beginning of class on Thursday, November 13, 2008. Late assignments will not be accepted. You must submit solutions to all required problems, answering them using complete sentences.

YOUR ASSIGNMENT MUST BE STAPLED AND PROBLEM NUMBERS CLEARLY LABELLED. UNSTAPLED ASSIGNMENTS WILL NOT BE ACCEPTED! DO NOT CROWD YOUR WORK. DO NOT WRITE IN MULTIPLE COLUMNS.

1. Chapter 15 Exercises

- #15.46, #15.48

2. Chapter 16 Exercises

- #16.12

3. Chapter 18 Exercises

- #18.26, #18.27, #18.36, #18.39, #18.40

4. In a clinical study of treatments for rheumatoid arthritis, patients were randomly allocated to receive either a standard medication or a newly designed medication. After a suitable period of observation, statistical analysis showed that there was no significant difference in the therapeutic response of the two groups, but that the incidence of undesirable side effects was much lower in the group receiving the new medication. The researchers concluded that the new medication should be regarded as preferable to the standard medication because it had been shown to be equally effective therapeutically and to produce fewer side effects. In what respect is the researchers' reasoning faulty?

5. A field trial was conducted to evaluate a new seed treatment that was supposed to increase soybean yield. When a statistician analyzed the data, he found that the mean yield from the treated seeds was 4 lbs/acre (pounds per acre) greater than that from the control plots planted with untreated seeds. However, the statistician declared the difference to be "not significant." Proponents of the treatment objected strenuously to the statistician's statement, pointing out that, at current market prices, 4 lbs/acre would bring a tidy sum, which would be highly significant to the farmer. How would you answer this objection?

6. (EXTRA PROBLEMS NOT TO BE SUBMITTED FOR GRADING)

- #15.55, #16.6, #16.7, #16.13, #16.16