

Homework Set 6

This homework will not be collected.

1. Reading: Sections 6.1, 6.2.
2. Exercises 6.43 a b, 6.55, 6.56 (pp. 346-350).
3. Refer to the data in Exercise 3.7 (p. 119).
 - (a) Does the new therapy appear to have a longer mean survival time than the standard therapy? Use $\alpha = 0.05$.
 - (b) Estimate the mean survival time using the new therapy using a 95% confidence interval.
 - (c) Estimate the difference in mean survival time between the standard and new therapies using a 95% confidence interval. Is the confidence interval consistent with the results from (a)?
 - (d) Are the required conditions for the procedures used to answer (a)-(c) satisfied?
4. A study was conducted on 16 dairy cattle. Eight cows were randomly assigned to a liquid regimen of water only (group 1); the others received liquid whey only (group 2). In addition, each animal was given 7.5 kg of grain per day and allowed to graze on hay at will. Although no significant differences were observed between the groups in the dairy-milk-production gauges, such as milk production and fat content of the milk, the following data on daily hay consumption (in kilograms/cow) were of interest:

Group 1	15.1	14.9	14.8	14.2	13.1	12.8	15.5	15.9
Group 2	6.8	7.5	8.6	8.4	8.9	8.1	9.2	9.5

- (a) Use these data to test the research hypothesis that there is a difference in mean hay consumption for the two diets. Use $\alpha = 0.05$.
- (b) Provide an estimate of the amount of difference in the mean hay consumption of the two groups.