Learning objectives

After reading this chapter and doing the exercises, you should be able to:

1. Understand how the analysis of variance procedure can be used to determine if the means of more than two populations are equal.

2. Know the assumptions necessary to use the analysis of variance procedure.

3. Understand the use of the F distribution in performing the analysis of variance procedure.

4. Know how to set up an ANOVA table and interpret the entries in the table.

5. Use output from computer software packages to solve analysis of variance problems.

6. Know how to use Fisher's least significant difference (LSD) procedure and Fisher's LSD with the Bonferroni adjustment to conduct statistical comparisons between pairs of population means.

7. Understand the difference between a completely randomized design, a randomized block design and factorial experiments.

8. Know the definition of the following terms:
   comparisonwise Type I error rate
   experimentwise Type I error rate
   factor
   level
   treatment
   partitioning
   blocking
   main effect
   interaction
   replication