7.3 Distribution

Things to remember to test the difference between the means:

a. Write the claim mathematically and identify Ho and Ha.
b. Write the standardized test statistic t and its corresponding area.
c. Find the P-value.
d. Decide whether to reject or fail to reject the null hypothesis. Then interpret the decision in the context of the original claim.

1. A bank manager is designing a system that is intended to decrease the variance of the time customers wait in line. Under the old system, a random sample of 10 customers had a variance of 144. Under the new system, a random sample of 21 customers had a variance of 100. At alpha = 0.10, is there enough evidence to convince the manager to switch to the new system? Assume both populations are normally distributed.

[ F = 1.44, Fail to reject Ho, there is not enough evidence to convince the manager to switch to the new system]

2. Extra Credit : 2 points : Return to Page 511 problem 7.77. State Ho and Ha. Obtain the P-value. Be sure the degrees of freedom are in the proper order. What do you conclude about the variation in piano lessons and Control group scores?