MS Module 10: Single-Factor ANOVA – Levene's test (overview)

(The attached PDF file has better formatting.)

Reading: §11.1, subsection on Testing for the Assumption of Equal Variances

To test whether groups have equal means, the analysis of variance assumes that the populations from which the groups are drawn have equal variances. One procedure to test this assumption (Bartlett's test) assumes that the populations are normally distributed. This modules explains Levene's test, which does not rely on the assumption of normality.

Levene's test is a proxy for testing equal variances. The test has several variants, such as deviations from the mean vs the median, none of which gives exact probabilities of Type I or Type II errors.

Final exam problems on Levene's test give data for an analysis of variance, from which to derive the absolute values of the deviations. You construct the analysis of variance from the absolute values of the deviations. The problems ask for the F test and its p value.

Final exam problems may combine the tests for equal means and equal variances; the textbook exercises use the same data for both tests. If you have mastered the previous module, this module is easy.