

Random Effects Exercise

Respond to the following questions individually then discuss your answers in your group. You should hand in your individual response. We will discuss your group responses and then I will lecture on advanced topics.

1. Estimate variance components σ_τ^2 and σ^2 from the following one-way random effects ANOVA table:

Source	df	SS	MS
Treatment	3	80	26.67
Error	24	120	5
Total	27	200	7.41

2. Run the SAS code for a two-way random effects model provided on the web page. Copy the data provided into a Minitab worksheet and analyze the data using General Linear Model under the ANOVA menu. Be sure to list both effects in the Random Factors box and include the interaction in the model box (e.g., C1 C2 C1*C2).
 - (a) For which effects are SAS's Type III tests correct? Which ones are incorrect?
 - (b) Do you know the SAS commands needed to compute the correct test statistics? Add these command(s) to the SAS source code and compare SAS's output to Minitab's GLM Model output.