Random Effects Exercise

1. Estimate variance components σ_A^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 fixed effects model provided on the web page. If you have access to Minitab, copy the data provided into a Minitab worksheet and analyze the data using General Linear Model under the ANOVA menu. Be sure to select both effects as Random Factors box and include the interaction in the model (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, if possible. You may use PROC GLIMMIX for this portion of the analysis if you prefer.