Biology 4605 / 7220 Name _____
Quiz #5b 15 October 2003

1. An agronomist measures defoliation in red maples, Norway maples, linden, and beech trees attacked by the elm spanworm *Ennomos subsignaria*. The measurement are made in the summer of 3 different years.

a) Write a symbol for defoliation, state a measurement protocol, and assign units appropriate to your protocol.

b) Write a general linear model to analyze defoliation as it depends on tree species, taking into account year to year differences. Use the symbols
Xtree and Xyear for your explanatory variables.

b). Complete an ANOVA table for the analysis, assuming n = 4*3*5 = 60 trees, SS_{total} = 100, SS_{year} = 20, SS_{tree} = 18, and $SS_{year*tree}$ = 30.

Source df SS MS F