Homework 5

1. Problem 22.5a-d. See Example 22.9 for an explanation of the experiment. The response is `tr1`. One way to obtain a satisfactory format for the data set is to use `PROC MEANS` in SAS (your new response will be `tr1mean`). The code below saves the data set in `WORK.B`.

   ```
   proc sort data=wheat; by ploidy species accession;
   proc means data=wheat noprint; by ploidy species accession;
   var tr1;
   output out=b mean=tr1mean;
   proc print data=b;
   run;
   ```

2. Problem 23.2a. (Example 4.1 contains the original description of the experiment.)

3. Verify the following formula for Expected Mean Squares for the Whole Plot Factor using Yandell's formulation for the Split Plot Experiment (see the second equation and following assumptions on p. 361; assume sum-to-zero constraints on fixed effects).

$$E(MSA) = \sigma^2 + b\sigma_P^2 + \frac{bn \sum_i \alpha_i^2}{a-1}$$