Biology 4605/7220 Name_____
Quiz #8b 4 November 2002

The General Linear Model consists of
--a response variable,
--one or more explanatory variables,
--parameters that relate response to explanatory variable(s),
--an error term.

1. Steel and Torrie (Principles and Procedures of Statistics 1960) report oat yield (Yield = bushels/acre) of untreated seeds compared to seeds treated with Panogen (tr = Panogen or not). Both uninfected seeds and seeds infected with H. victoriae were used (inf = infected or not).

1a. Assign symbols to the response and explanatory variables.

1b. Write a General linear model for the analysis.

_____ = _____

1c. Fill in the ANOVA table below.

```
MTB > anova 'yield' = 'inf' 'tr' 'inf'*'tr';

Factor     Type Levels Values
inf       fixed      2     0     1
tr        fixed      2     0     1

Analysis of Variance for yield

Source      DF         SS         MS       F      P
inf          1     486.20     486.20  ______  0.059
tr           1     145.20     145.20  ______  0.276
inf*tr       1      57.00      57.00  ______  0.488
Error        __    1338.75    111.56  ______
Total       15     2027.16
```

1d. What is the variance in Yield ?

2. Draw an example of an unacceptable plot of residual versus fitted values.