Biology 4605/7220   Name_____Key_____
6 November 2007   Quiz 8b

(A) Define variables in a tabular format, as follows.

     name   symbol   scale

scales: nominal (=categorical), ordinal, or cardinal
       cardinal = interval _or_ ratio scale.

(B) Using the symbols, write a general linear model relating the response variable
      to explanatory variable(s) and interaction terms (if appropriate).

(C) Complete the first two columns of the ANOVA table   source df

(D) State the name of the analysis, from the following list.
      t-test, one-way ANOVA, two-way ANOVA, three-way ANOVA
      paired comparisons, randomized blocks,
      hierarchical (nested) ANOVA
      regression, multiple regression,
      ANCOVA (at least 1 nominal and at least 1 cardinal scale explanatory variable)
      none of the above.

1. Simpson *et al* (1960, *Quantitative Zoology*) reported earlier data (Marian, 1950) on the
winglength in males of three species of starling *Sturnus*, from India:
     -*S. contra* (sample size = 11)
     -*S. ginginiamus* (sample size = 12)
     -*S. fuscus* (sample size = 8)   A=6 B=2 C=6 D=1

A. name   symbol scale

   Wlength WL   cardinal
   Species SP   nominal

C. source   df

   Species 2
   Error   28
   Total   30

B. ___WL__ = _____$\beta_0 + \beta_{SP}*SP$_____ + ϵ

D.   One-way ANOVA