

1. For each of the following two named tests, write a general linear model, then use the model to partition the degrees of freedom and fill in the first two columns in the ANOVA table. The list of sources of variance should match the model that you write. Assume that the response variable has 50 values (samples size = 50). Use the following symbols.

Q = response variable

X1, X2 = regression (explanatory) variable or variables

F1, F2 = factor (categorical explanatory) variable or variables

t-test

glm: \_\_\_\_\_ Source df

ANCOVA with 5 categories

glm: \_\_\_\_\_ Source df

2. The energy value (in kilocalories) was measured from fruit in a total of 72 mango trees (*Mangifera indica*) grown in three geographic regions (3 X 24 = 72).

Define response and explanatory variables, with symbols.

Using your symbols, write a general linear model to analyze whether energy content depends on geographic region, then use the general linear model you wrote to complete the first two columns of an ANOVA table.

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