Biology 4605 / 7220 Name _____
Quiz #11b 27 November 2007 (Quiz9 29Nov 2000)

1. The relation of a response to an explanatory variable can be quantified in categories (categorical explanatory variable) or as a continuous function (explanatory variable on a ratio type of scale). For the following analyses, list the number of categorical explanatory variables, the number of ratio-scale explanatory variables, and the number of interaction terms.

	Categorical	Ratio-scale	Interaction
Rate of shrinkage of area covered by coral reefs.	0	1	0
Two-way ANOVA.	2	0	<1
Goodness of fit of number of surviving colonies in 2 petri dishes each innoculated with 10 colonies.	1	0	0
Analysis of growth rate in relation to temperature in five microbial cultures. (2 terms + interaction)	1	1	<1
Hierarchical ANOVA.	>2	0	0
Growth rate of plants at 4 levels of exposure to CO_2, controlled for light and temperature. (3 total terms + interaction)	2	1	<3
Randomized block design.	2	0	<1

2a. Under the assumption of equal sprouting rates, compute the expected proportion of sprouting seeds in each of 4 plots if seed release in each plot was 80, 40, 40 , and 20 respectively.

8:4:4:2 or 4:2:2:1 or 4/9, 2/9, 2/9, 1/9

2b. Compute the expected number of sprouting seeds in each plot if a total 45 seeds sprouted.

45(8/18) = 20 45(4/18) = 10 45(4/18) = 10 45(2/18) = 5

2c. The observed sprout numbers were 15 ,12, 12, and 6 in the 4 plots.
Write a model to test the goodness of fit of observed to expected number of sprouts.
(Give names to symbols in the model).