1. If you carry out a general linear model analysis and find heterogeneous residuals, name two ways you can obtain a better p-value.

2. A general*ized* linear model links a response variable to one or more explanatory variables X_i according to a link function. Here are 3 link functions.

identity link	Y	$=$	μ	$+$ error	Used with the general linear model
log link	f	$=$	e^μ	$+$ error	Used with poisson response variable f
logit link	Odds	$=$	e^μ	$+$ error	Used with binomial variable expressed as Odds

e is the base of natural logarithms
μ is the sum of a series of explanatory terms:　　　$\mu = \Sigma(\beta_i \cdot X_i)$

Write a generalized linear model for a study of frequency of deaths (D = deaths per month per hospital) in 100 hospitals classified by size (S = number of beds), presence of a medical school (MS = present or absent), and age of the building (A = years). Assume no interactive effects.

　__D__ $=$ _____　　　__μ =__ _____

3. Complete the following ANOVA table and write the corresponding general linear model for analysis of bacterial concentration [N].

Source	df	
TR	_____	TR= treatment (2 drugs, 1 control group)
tanks	_____	all three treatments in each of 4 tanks
Time	_____	once a week for 5 weeks
TR+Time	_____	
error	_____	
total	119	

_____ $=$ _____ $+$ _error_