Module 4D Questions:

1. **If the assumptions of general linear models are met, which of the following will NOT be true of the residual plot:**
    a. The model will have a roughly symmetric cloud of points above and below the horizontal line at 0.
    b. There will be noticeable curvature as we move left to right along the horizontal axis.
    c. Approximately equal variance of points above and below the horizontal line at 0.

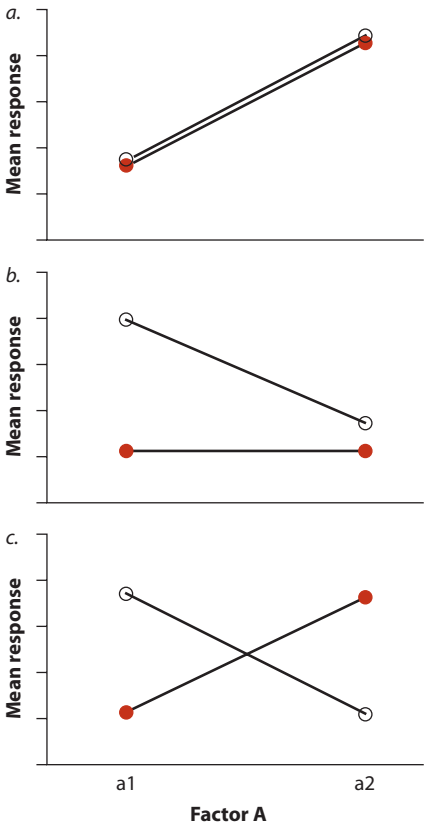
2. Conduct a Multi-factor ANOVA showing your hypotheses: Strain × Diet on Glucose. Do strain, diet, and their interaction affect glucose? Here is the resulting table, along with some summary statistics:

Source	SS	df	MS
Strain	**128**	2	**64**
Diet	**5808**	1	**5808**
Strain × Diet	**0**	2	**0**
Error	**12**	6	**2**

    Grand Mean = **135**
    Strain Means = **139, 135, 131**
    Diet Means = **113, 157**
    Cell Means = **117, 161, 113, 157, 109, 153**

3. For the following multi-factor ANOVA results, match the description (numbered 1,2,3) to the diagram (lettered a, b, c)
    1. No main effect of A or B but an interaction
    2. A main effect of A and B and an interaction
    3. A main effect of A, no main effect of B and no interaction

    * It may be obvious, but the two different levels of B are indicated by the red dot (for one level of B) and the open circle (second level of B).



4. *There are two strains of mouse and three diets. Using the following table, explain any main effects, and any interactions.*

Source of variation	Sum of Squares	df	Mean Square	F	P
Diet	30.5	2	15.25	5.12	0.008
Genotype	12.3	1	12.3	4.13	0.045
Diet*Genotype	8.6	2	4.3	1.44	0.246
Residual	59.7	20	2.985		
Total	111.1	25			