

## Final Project: Data Analysis Report

Feipeng Huang

#Q1 The relationship between body mass and length seems to be linear. Mass is positive correlated with length.

#Q2 The data, especially body length, does not appear normally-distributed because the histograms are not symmetrical.

#Q3 I think the (unconditioned) body masses and body length are not normally-distributed (histograms are skewed, p-values < 0.05). My visual assessment of normality matched the results of the numerical normality tests.

#Q4 *D. dorsalis* seems to weigh more than *D. sublineatus* and male seems to weigh more than female, but not by much. There is no significant difference.

#Q5 Based on the numerical and graphical diagnostics, all models fail to fulfill the assumption of normality of the residuals.

#Q6 Violations of the normality assumption are not equally severe for all the models. The violation is much more severe in model 1.

#Q7 0.8754988

#Q8 163.6745 mm

$76.1246565 + (0.8754988 * 100)$

## [1] 163.6745

#Q9 76.12466 mm

$76.1246565 + (0.8754988 * 0)$

## [1] 76.12466

#Q10 female

#Q11 *Delomys dorsalis*

#Q12 male

#Q13 *Delomys dorsalis*

#Q14 Sex and species are significant predictors for body mass.

#Q15 There is not a significant interaction.

#Q16 The significance level of sex and the significance level of species do not change much among the different models. All corresponding p-values are very small.

#Q17 model 4 and 5

#Q18 I would select model 4 because it is the best fit (lowest AIC), and an additive model is easier to understand and explain than an interactive model.