Assignment 4 Data Set 1

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# Null Hypothesis

* No relationship exists between type of feed supplement and chick weight.

# Alternative Hypothesis

* A relationship exists between the type of feed supplement and chick weight, with that most resemblant of the wild type nutrient promoting the most growth.

# Statistical Test

* ANOVA with a bonferroni correction for pairwise comparisons
* Df Sum Sq Mean Sq F value Pr(>F)  
  feed 5 231129 46226 15.37 5.94e-10  ***Residuals 65 195556 3009***  
  ***--- Signif. codes:***  
  ***0 ‘***’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1
* casein horsebean linseed meatmeal soybean horsebean 3.1e-08 - - - -  
  linseed 0.00022 0.22833 - - -  
  meatmeal 0.68350 0.00011 0.20218 - -  
  soybean 0.00998 0.00487 1.00000 1.00000 -  
  sunflower 1.00000 1.2e-08 9.3e-05 0.39653 0.00447

### Test Assumptions

* Gaussian distribution
* Equal Variance amongst groups
* Independent errors
* Data are unmatched

# Outcome Analysis

* Casein promotes the most growth out of all the feed supplements, while horsebean promotes the leasts. There is no statistical difference between casien, meatmeal, and sunflower supplements, suggesting that these latter two supplements are as statistically efficient in promoting growth. However, this does not signify biological efficiency.