13.5: Lab- One-Way ANOVA

Name: _____

Section: _____

Student ID#:_____

Work in groups on these problems. You should try to answer the questions without referring to your textbook. If you get stuck, try asking another group for help.

Student Learning Outcome

- The student will conduct a simple one-way $ANOVA$ test involving three variables.

Collect the Data

Record the price per pound of eight fruits, eight vegetables, and eight breads in your local supermarket.

Fruits	Vegetables	Breads

Explain how you could try to collect the data randomly.

Analyze the Data and Conduct a Hypothesis Test

1. Compute the following:
   a. Fruit:
      i. $\bar{x} =$ _____
      ii. $s_x =$ _____
      iii. $n =$ _____
   b. Vegetables:
      i. $\bar{x} =$ _____
      ii. $s_x =$ _____
      iii. $n =$ _____
   c. Bread:
      i. $\bar{x} =$ _____
      ii. $s_x =$ _____
      iii. $n =$ _____
2. Find the following:
   a. $df(\text{num}) =$ _____
   b. $df(\text{denom}) =$ _____
3. State the approximate distribution for the test.
4. Test statistic: $F =$ _____
5. Sketch a graph of this situation. CLEARLY, label and scale the horizontal axis and shade the region(s) corresponding to the p-value.
6. p-value $=$ _____
7. Test at $\alpha = 0.05$. State your decision and conclusion.
8. a. Decision: Why did you make this decision?
   b. Conclusion (write a complete sentence).

c. Based on the results of your study, is there a need to investigate any of the food groups' prices? Why or why not?