**College Prep Stats Chapter 8 Project**

**Group Project (maximum of 3 students)**

**Data Set 17** “**Weight**” in **Weights and Volumes of Cola** (P. 785) (**Keep 4 decimal places**)

**Direction: Use α = 0.05 significance level.** **Your report should exactly follow the order of the tasks. The project must be all typed!!! No hand writing will be accepted. All the required formulas are provided and MUST be “Copy” and “Paste” to the “*Calculate test statistic*” part. It will lose ALL 10 points if you fail to do so in copying-pasting-reediting the formula part.**

**Total points: 260 Due 4/14/2020**

**Names:** **Names MUST be ALL typed or the project will be returned.** (10 pts)

**Data Set** (10 pts)

**Task #1**

**Regular Coke** claimed that only 20% of the Regular Coke is weighted less than 0. 8160 oz.

1. Check the requirement (s) (10 pts)

SRS -- Yes

Binomial Distribution Properties -- Yes

*np* = xxxx *nq* = xxxx

1. Write the test hypothesis *H*0 and *H*1 (10 pts)

***H*0:** ***H*1:**

1. Find the sample proportion (10 pts)

1. Calculate test statistic (10 pts)
2. Find the P-Value (10 pts)

P-Value =

1. Short conclusion (10 pts)

Reject ***H*0** Fail to reject ***H*0**

1. State the conclusion (10 pts)

**Task #2**

**Diet Pepsi** claimed that the mean weight of its product is less than 0.7852 oz.

1. Check the requirement (s) (10 pts)

SRS – Yes, blabla

1. Write the test hypothesis *H*0 and *H*1 (10 pts)

***H*0:** ***H*1:**

1. Find the sample mean (10 pts)
2. Calculate test statistic (10 pts)
3. Find the P-Value (10 pts)
4. Short conclusion (10 pts)
5. State the conclusion (10 pts)

**Task #3**

**Diet Coke** claimed that the standard deviation of its product weight is 0.0035 oz.

1. Check the requirement (s) (10 pts)

SRS -- Yes, blabla

Provide histogram from Microsoft Excel and comment on histogram (10 pts)

Identify any outlier(s) (10 pts)

IQR = Q3 – Q1 = xxxx LL = Q1 – 1.5 IQR = xxxx UL = Q3 + 1.5 IQR = xxxx

Provide Normal Quantile Plot from Microsoft Excel and comment on Normal Quantile Plot (10 pts)

1. Write the test hypothesis *H*0 and *H*1 (10 pts)

***H*0:** ***H*1:**

1. Find the sample standard deviation (10 pts)
2. Calculate test statistic (10 pts)
3. Find the P-Value (10 pts)
4. Short conclusion (10 pts)
5. State the conclusion (10 pts)

**Test Statistic Formulas**

***p* = < > ≠ µ = < > ≠ σ = < > ≠**

