Stat 123 Homework Assignment 1

Due Wednesday February 1st by 8:00pm

Using R Markdown, please complete the following assignment. If an answer does not require any R code, you can type the answer to the question outside of a chunk. Make sure that your assignment is well labelled so that it is clear where each question's answer begins. Your assignment should be submitted as a pdf (whether you knit directly to PDF or knit to HTML or Word and then convert the file to a pdf).

1. Twenty bottles of water were randomly selected from a large collection of bottles in a company's warehouse. These twenty bottles are referred to as the:

a) Parameter
b) Population
c) Sample

2. A journalist wanted to know how his constituents felt about a planned rezoning. He randomly selected 234 names from the city phone directory and conducted a phone survey.

a) What is the population of interest?

b) What is the sample of interest?

c) What type of sampling was used?

3. You can see a sample of dataset below.

Patient ID	Cancer Type	Number of Visits	Status
123_87	Lung	3	Death
134_99	Brain	4	Survival
135_46	Breast	5	Death
124_76	Kidney	3	Death
132_54	Lung	6	Survival

(a) What are the individuals in the data set?

(b) What are the variables in the data set?

(c) Determine if each variable is categorical or numerical.

4. A journalist is trying to determine the average age of the BC residents who have received fines for violating restrictions related to COVID-19. He solicits data from a local police department and records the following ages for the five tickets given out by this precinct.

13; 10; 25; 34; 15

(a) What is the parameter of interest?

(b) Estimate the sample varience. Round your answer to 2 decimal places.

(c) Estimate the sample mean. Round your answer to 2 decimal places.

5. Create the following data frame called Sample using the data.frame() function.

```
ID   Name    Age   Vote
1    Juan    22    TRUE
2    Maria   15    FALSE
3    Mark    19    TRUE
```

(a) Create a character vector called Age which contains the values from the second column of the Sample.

(c) Calculate the number of TRUE votes in the third column.

(d) Calculate the average of the ages in the second column.

4. Create a list called CourseName and mention the name of courses you have this semester and then create the second list called CourseUnits with the units of each course.

(a) Combine the list CourseName and CourseUnits together.

(b) Change the values of CourseUnits to the character.