STAT 1910 - Winter 2022

Assignment - I

CHAPTER 1 & 2

Your Name: Jonathon Meney **Your Student ID: 348074**

MARKS: 6

Question 1. (1.5 marks)

The following table lists eight pairs of x and y values.

x	21	7	11	8	4	14	28	29
y	19	5	15	7	10	9	19	17

Compute the value of each of the following:

a. Σy **b.** Σx^2 **c.** Σxy **d.** $\Sigma x^2 y$ **e.** Σy^2

a. 101
b. 2512
c. 1846
d. 42004
e. 1491

Question 2. (1.5 marks)

A professor is teaching a large class that has 247 students. He wants to select a sample of 15 students to do a study on the habits of his students.

For each of the following sampling methods, explain what kind of method is used (e.g., is it a random sample, nonrandom sample, sample with replacement, sample without replacement, convenience sample, judgment sample, quota sample).

a. There are 15 sociology majors in his class. He selects these 15 students to include in the sample. **(0.5 marks)**

A nonrandom, convenience sample without replacement is used as he is selecting the sociology majors of the class specifically, they are in his class, so it is convenient for them to be chosen, and they are not being put back into the population of students, the sample remains the static same 15 students.

b. He goes through the roster and finds that he knows 30 of the 247 students. Using his knowledge about these students, he selects 15 students from these 30 to include in the sample. **(0.5 marks)**

A stratified random sample is used. A strata of people the professor knows is created and a simple random sample of 15 students is selected from the 30 students in the strata.

c. He enters the names of all 247 students in a spreadsheet on his computer. Then, he uses statistical software (such as Minitab) to select 15 students. **(0.5 marks)**

A random sample without replacement is being used as every student has an equal chance of being chosen by the software, and the software will choose 15 students out of the 247.

Question 3. (3.0 marks)

The following data give the number of text messages sent on 40 randomly selected days during 2015 by a high school student:

32	33	33	34	35	36	37	37	37	37
38	39	40	41	41	42	42	42	43	44
44	45	45	45	47	47	47	47	47	48
48	49	50	50	51	52	53	54	59	61

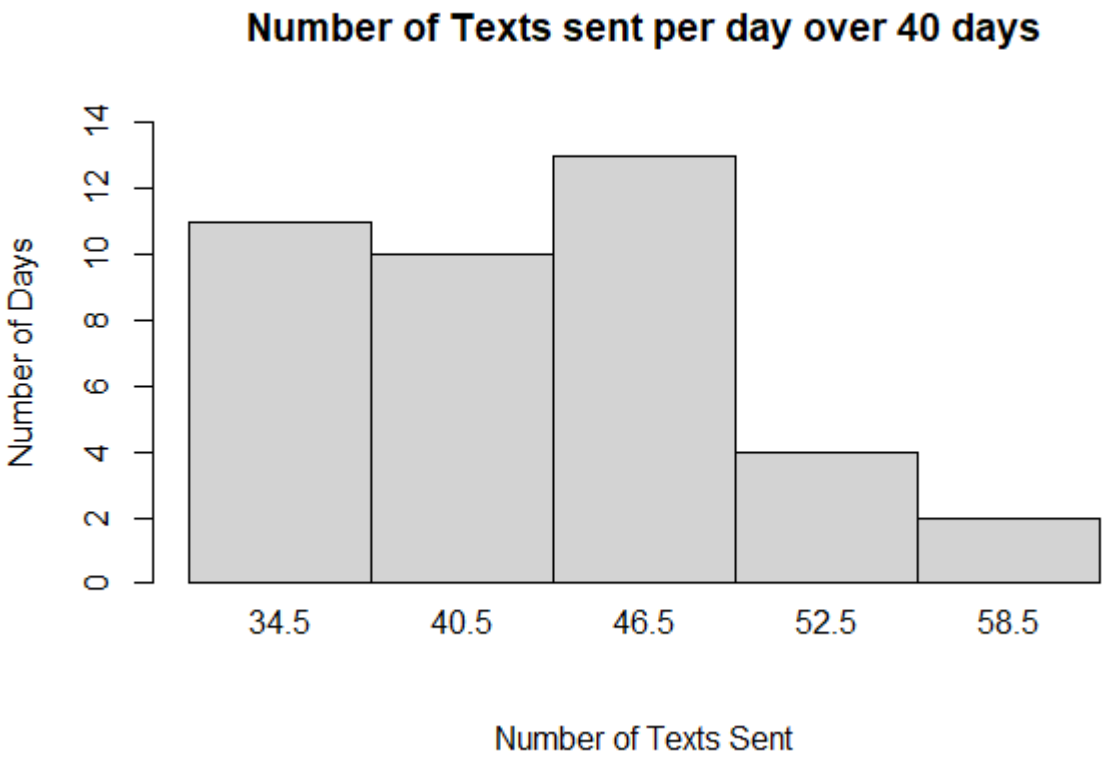
a. Construct a frequency distribution table. Take 32 as the lower limit of the first class and 6 as the class width. **(0.75 marks)**

Number of Texts sent per day over 40 days	
Number of Texts	Number of Days(f)
32 - 37	10
38 - 43	9
44 - 49	13
50 – 55	6
56 - 61	2

b. Calculate the relative frequency and percentage for each class. **(0.25 marks)**

Relative Frequency and Percent Distributions of Number of Texts sent per day over 40 days		
Number of Texts	Relative Frequency	Percentage
32 - 37	0.250	25%
38 - 43	0.225	22.5%
44 - 49	0.325	32.5%
50 – 55	0.150	15%
56 - 61	0.050	5%

c. Construct a histogram for the frequency distribution of part a. **(1.00 marks)**



d. On what percentage of these 40 days did this student send 44 or more text messages?

(0.25 marks)

52.5% of the 40 days the student sent 44 or more text messages.

e. Prepare the cumulative frequency, cumulative relative frequency, and cumulative percentage distributions. **(0.75 marks)**

Relative Frequency and Percent Distributions of Number of Texts sent per day over 40 days			
Number of Texts	Cumulative Frequency	Relative Frequency	Percentage
32 - 37	10	0.250	25.0%
38 - 43	19	0.475	47.5%
44 - 49	32	0.800	80.0%
50 – 55	38	0.950	95.0%
56 - 61	40	1.000	100%