STAT 1910 - Winter 2022

Assignment - II

CHAPTER 3

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

MARKS: 6

Question 1. (1.0 mark)

Twenty randomly selected married couples were asked how long they have been married. Their responses (rounded to years) are listed below.

12	27	8	15	5	9	18	13	35	23
19	33	41	59	3	26	5	34	27	51

a. Calculate the mean, median, and mode for these data.
b. Calculate the 10% trimmed mean for these data.

a. Mean, Median, and Mode
    a. Mean = 23.15
    b. Median = 21
    c. Mode = 5
    d. Mode = 27
b. 10% Trimmed Mean = 21.5625

Question 2. (1.0 mark)

A statistics professor calculates her final grades based on quizzes, in-class group work, homework, a midterm exam, and a final exam. However, not all of the assignments contributed equally to the final grade. John received the scores (out of 100 for each assignment) listed in the table below. The instructor weighted each item as shown in the table.

Assignment	John's Score (Total Points)	Percentage of Final Grade Assigned by the Instructor
Quizzes	75	30
In-class group work	52	5
Homework	85	10
Midterm exam	74	15
Final exam	81	40

Calculate John's final grade score (out of 100) in this course.

Weighted Mean = 77.1
John's final grade is 77.1 out of 100.

Question 3. (1.5 marks)

The following data give the number of years of employment for all 20 employees of a small company.

23	9	12	21	24	6	33	34	17	3
12	31	5	10	27	9	15	16	30	38

a. Compute the range, variance, and standard deviation for these data.
b. Calculate the coefficient of variation.
c. Are the values of these summary measures population parameters or sample statistics? Explain.

a. Range, Variance, and Standard Deviation
    a. Range = 35
    b. Variance = 114.9342
    c. Standard Deviation = 10.72074
b. Coefficient of Variation = 57.17727 %
c. These are population parameters as they are measures based off of the whole population of all 20 employees.

Question 4. (1.5 marks)

The following table gives the frequency distribution of the total miles driven during 2015 by 300 car owners.

Miles Driven in 2015 (in thousand)	Number of Car Owners
0 to less than 5	7
5 to less than 10	26
10 to less than 15	59
15 to less than 20	71
20 to less than 25	62
25 to less than 30	39
30 to less than 35	22
35 to less than 40	14

a) Find the mean, variance, and standard deviation.

Mean = 19.66667

Variance = 67.47222

Standard Deviation = 8.214148

b) Give a brief interpretation of the values in the column labeled *mf* in your table of calculations.

The values in the column labeled *mf* gives the approximate total miles driven for the total number of car owners in that group/class.

c) What does Σmf represent?

Σmf represents an approximation of the total miles driven of all car owners.

Question 5. (1.0 mark)

A large population has a bell-shaped distribution with a mean of 310 and a standard deviation of 37. Using the empirical rule, find the approximate percentage

of the observations that fall in the intervals

a) $\mu \pm 1\sigma$

68%

b) $\mu \pm 2\sigma$

95%

c) $\mu \pm 3\sigma$

99.7%