Unit 6 Summary Measures Tasks and Instructions

Exercise 6.1 – Mean, Standard Deviation for Diet B

Goal: Compare weight loss between Diet A and Diet B using descriptive statistics.

Steps:

1. Open Exa 8.1B.xlsx.
2. In cells **F23 to F25**, calculate for **Diet B**:
    - **Sample Size**: =COUNT(C2:C51) (assuming Diet B data is in column C)
    - **Mean**: =AVERAGE(C2:C51)
    - **Standard Deviation**: =STDEV(C2:C51)
3. Format values to 3 decimal places.

Interpretation Prompt:

- Compare the **mean** of Diet B with Diet A's (5.341 kg).
- Discuss which diet resulted in **greater average weight loss** and whether the **spread** (SD) indicates consistency in results.

Exercise 6.2 – Median and Interquartile Range for Diet B

Goal: Use median and quartiles to assess typical and middle-range weight loss.

Steps:

1. Open Exa 8.2B.xlsx.

2. In cells **F26 to F29**, calculate:
    - **Median**: =MEDIAN(C2:C51)
    - **Q1**: =QUARTILE(C2:C51,1)
    - **Q3**: =QUARTILE(C2:C51,3)
    - **IQR**: =F28 - F27 (i.e., Q3 – Q1)
3. Format to 3 decimal places.

Interpretation Prompt:

- Compare Diet B's **median and IQR** to Diet A's (Median = 5.642 kg, IQR = 3.285 kg).
- Discuss which diet had more **consistent middle-range results** and whether Diet B had more **extreme values** or **greater variation**.

Exercise 6.3 – Brand Preferences by Area 2

Goal: Use frequency and percentage analysis to compare brand preferences.

Steps:

1. Open Exa 8.3D.xlsx.
2. Use COUNTIF on **Area 2 data** to compute:
    - **Brand A**: =COUNTIF(C2:C71,"A")
    - **Brand B**: =COUNTIF(C2:C71,"B")
    - **Other**: =COUNTIF(C2:C71,"Other")

3. Calculate total responses: =SUM(E6:E8)
4. Compute percentage for each brand:

   E.g., for Brand A: =100*E6/E$9

   Copy for others.
5. Check that total = 100% in E18.

Interpretation Prompt:

- Compare **Area 2 preferences** with Area 1's:
    - Area 1: 15.7% A, 24.3% B, 60.0% Other.
- Identify **key differences** in consumer choices and discuss any potential demographic or cultural implications.

Summary Interpretation Template (Optional for Submission)

You can present your interpretations like this:

Exercise 6.1: Diet B had a lower mean weight loss (X kg) compared to Diet A (5.341 kg), suggesting Diet A may be more effective. However, if Diet B has a smaller standard deviation, it could mean more consistent results across participants.

Exercise 6.2: The median weight loss in Diet B was Y kg, compared to Diet A's 5.642 kg. A smaller IQR in Diet B might indicate less variability, while a larger one would suggest more spread in outcomes.

Exercise 6.3: In Area 2, Brand A was preferred by Z%, Brand B by W%, and Other by V%. Compared to Area 1, there is a notable shift toward/away from [brand], indicating a difference in consumer preference patterns between demographics.