Descriptive Statistics

LLE – Mathematics and Statistics Skills

1 Variable Classification

For the following variables, how would you classify them?

1. A variable recording a person's primary method of transport to work (e.g., Car, Bus, Train, Bicycle).

   ○ Nominal   ○ Ordinal   ○ Continuous   ○ Discrete

2. A variable recording a t-shirt size (e.g., Small, Medium, Large, Extra Large).

   ○ Nominal   ○ Ordinal   ○ Continuous   ○ Discrete

3. A variable recording the weight of a package in kilograms.

   ○ Nominal   ○ Ordinal   ○ Continuous   ○ Discrete

4. A variable recording the brand of a person's mobile phone (e.g., Apple, Samsung, Google).

   ○ Nominal   ○ Ordinal   ○ Continuous   ○ Discrete

5. A particular company uses the following to rate their financial position 'Thriving', 'OK', 'Breaking even', 'Losing money' or 'Failing'.

   ○ Nominal   ○ Ordinal   ○ Continuous   ○ Discrete

6. A variable that represents a user's shoe size.

   ○ Nominal   ○ Ordinal   ○ Continuous   ○ Discrete

2   Measures of Average

1. Given the data 5, 8, 8, 9, 15, calculate the mean.

Answer: _____

2. Given the data 5, 8, 8, 9, 15, calculate the median.

Answer: _____

3. Given the data 5, 8, 8, 9, 15, find the mode.

Answer: _____

4. What is another name for the 50th percentile?

○ Range   ○ Mean   ○ Median

3   Measures of Dispersion

1. Given the data 5, 8, 8, 9, 15, calculate the Range.

Answer: _____

Formulas

Variance (s^2): A measure of how disperse the data are.

$$s^2 = \frac{\sum(x_i - \bar{x})^2}{n - 1}$$

Standard Deviation (s): The square root of the variance.

$$s = \sqrt{\frac{\sum(x_i - \bar{x})^2}{n - 1}}$$

A customer records the number of kilometres they run on 9 gym visits:

$$12, 10, 14, 14, 11, 8, 15, 18, 15$$

2. Calculate the mean distance $(\bar{d})$.

Answer: _____

3. Complete the table below using the mean $(\bar{d} = 13)$.

Distance (d_i)	Difference $(d_i - \bar{d})$	Squared $((d_i - \bar{d})^2)$
12	-1	1
10	-3	9
14	1	
14	1	
11		
8		
15		
18		
15		
SUM	—-	

4. Calculate the sample variance (s^2), correct to 2 decimal places.

Answer: _____

5. Calculate the sample standard deviation (s), correct to 2 decimal places.

Answer: _____

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