KAPLAN

Business Statistic and Data-Driven Decision Making Main Assignment (Class 13A)

Assignment Due Date: 29 March 2023, 2359 hours

Weight: 100%

Assignment Instruction

- Write your full name (according to register), Student Number (CTxxxx) and class clearly on the first page of the assignment.

- Your assignment should be type-written. You are allowed to insert your mathematical workings as images, if require.

- Page format should follow the APA style: line spacing=1.5, font=Arial, font size=12 and left justified.

- Include at least 8 credible resources in your Reference Page, using APA Referencing format.

- Submit your assignment in a single **MS Word** document via the LMS before the due date.

Full Name: _____

Student ID: _____

Question 1 (25 marks)

Conduct a market survey on the price of a product (e.g., mobile phone, running shoe, jean, potato chips, etc.) that you are interested in. You are required to collect **at least 6** records as follows:

No.	Brand	Model / Description	Price (S$)	Source / URL
1				
2				
3				
4				
5				
6				

(4 marks)

Calculate

a) the mean, the median and the mode.

(5 marks)

b) the standard deviation.

(6 marks)

c) the coefficient of variation.

(3 marks)

d) the quartiles and interquartile range

(7 marks)

Question 2 (25 marks)

a) The marketing manager wants to analyse the preference on action movie for his customers. The following table shows a summary:

		Preference		
		Yes	No	Total
Gender	Male	80	20	100
	Female	30	70	100
	Total	110	90	200

Find the probability that a randomly selected customer who:

  i. likes action movie

  ii. is male and like action movie

  iii. is female or like action movie

(12 marks)

b) The salary of a sales manager is normally distributed with a mean of $3500 and standard deviation of $420.

  i. Find the probability that a randomly selected manager has a salary that is between $3,000 and $4,200?

  ii. If 20 managers are randomly selected, what is the probability that their average salary exceeds $3,750?

(13 marks)

Question 3 (25 marks)

Use the data you have collected in Question 1 to answer the following questions. You may assume that the price of the product is normally distributed.

a) What is the 90% confidence interval for the mean price?

(7 marks)

b) With reference to this context, explain the meaning of the confidence interval that you have obtained.

(5 marks)

c) Conduct an appropriate hypothesis test, at the 0.05 level of significance, to determine whether the population mean price is 10% above the value of the sample mean you have determined.

(13 marks)

Question 4 (25 marks)

Identify a research case that is suitable for simple linear regression analysis. This should involve a dependent variable (Y) and an independent variable (X). Collect **at least 6** pairs of data for the analysis.

a) State the dependent and independent variables. List down the data collected.

(5 marks)

b) Determine the regression equation.

(14 marks)

c) Compute and interpret the correlation coefficient.

(6 marks)

- END OF ASSIGNMENT -