SECI2143 - 08 (2020/2021 - 2)

Assignment 1

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83.5

Question 1

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1. (a) Member of football clubs in Malaysiana
   (b) Players of Malaysiana Super League
   (c) Total number of goals
   (d) Mean number of goals
   (e) Book written by the journalist
   (f) Old newspaper articles

5

2. (a) All students at a school in Jay Bie
   (b) Second year pupils in that school in Jay Bie
   (c) Number of pupils
   (d) Height of second year pupils
   (e) Data collected by statistic students
   (f) Data collected during medical examination in first year

Question 2

20

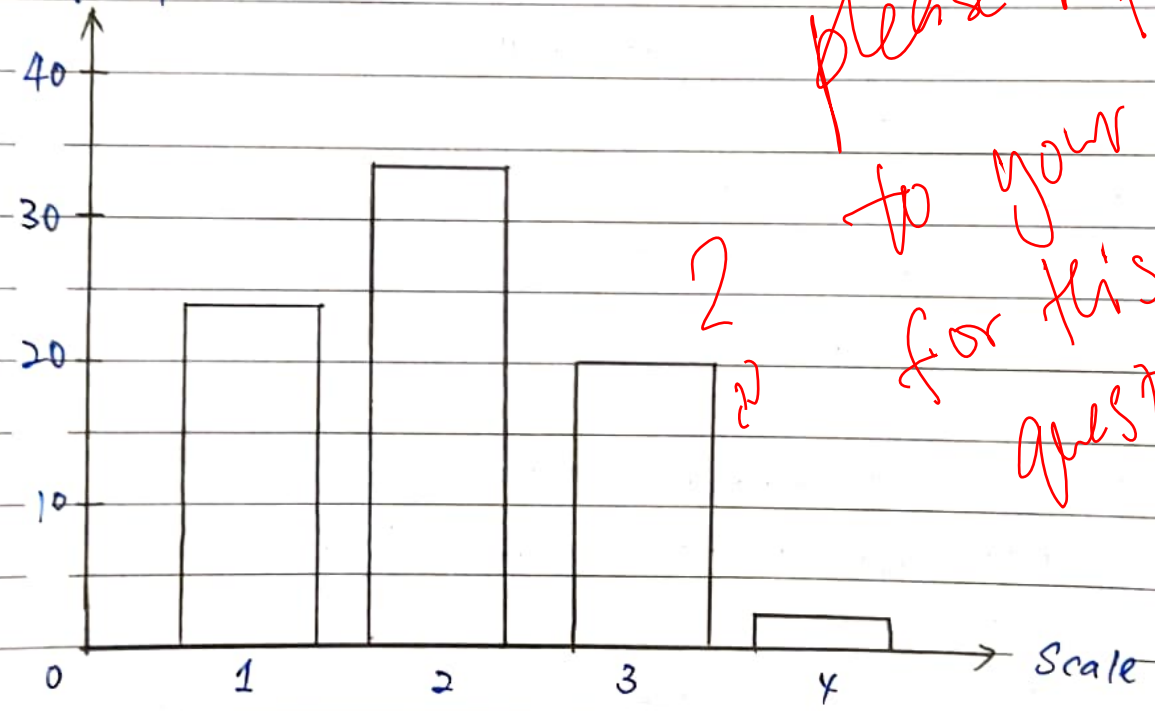
1.

Scales / Factors	Frequency				Total
	1	2	3	4	
Price	14	6	0	0	20
Condition of the Car	3	6	11	0	20
Fuel Efficiency	1	11	7	1	20
Car Depreciation	6	11	2	1	20

2.

Scale	Frequency	Relative Frequency	Cummulative Frequency	Cummulative Relative Frequency
1	24	0.30	24	0.30
2	34	0.43	58	0.73
3	20	0.25	78	0.98
4	2	0.02	80	1.00
Total	80	1.00		

3.



please refer to your friends for this question.

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Q3 1.

Stem	Leaf
0	4 8 9
1	6 8
2	1 3 4
3	0 2 3 8
4	2 3 4
5	5
6	5
7	
8	1
9	

Key: 5|5 means 55 days

2. a) $\text{Mean} = \frac{4+8+9+16+18+21+23+24+30+32+33+38+42+43+44+55+65+81}{18}$

$= 32.56$

b) No mode

c) Median $= (30+32) \div 2$

$= 31$

3. a) $Q1 = \frac{25}{100}(18)$ $Q2 = \text{median}$ $Q3 = \frac{75}{100}(18)$

$= 4.5^{th}$ $= 31$ $= 13.5^{th}$

$= 5^{th}$ $= 14^{th}$

$\therefore Q1 = 18$ $\therefore Q2 = 31$ $\therefore Q3 = 43$

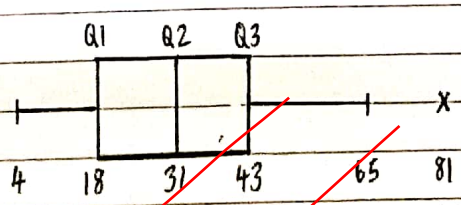
b) $IQR = 43 - 18$

$= 25$

c) Lower Limit $= 18 - 1.5(25)$ Upper Limit $= 43 + 1.5(25)$

$= -19.5$ $= 80.5$

$\therefore$ Outliers $= 81$



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Q4 1. $\text{Mean} = \frac{1(RM175000) + 5(RM250000) + 4(RM500000) + 1(RM700000)}{11}$

$= RM375000$

2. Median $= (11+1) \div 2$

$= 6^{th}$

$\therefore$ Median $= RM250000$

3. Median, because it is a more appropriate measure of central tendency for distributions which are largely skewed.

Question 5

1.

Age	Ratio
Current Smoker	Nominal
Body Mass Index (BMI)	Interval
Hypertension	Nominal

2

19.5

2.

Class Interval	Category	Frequency
$0 < BMI < 18.5$	Underweight	0
$18.5 \leq BMI < 25.0$	Normal	12
$25.0 \leq BMI < 30.0$	Overweight	7
$30.0 \leq BMI$	Obesity	1

2

3.

Class Interval	Class Boundaries	Class Midpoint	Frequency	Cumulative Frequency
60-64	59.5-64.5	62	3	3
65-69	64.5-69.5	67	5	8
70-74	69.5-74.5	72	5	13
75-79	74.5-79.5	77	4	17
80-84	79.5-84.5	82	3	20
Total	25	20	20	20

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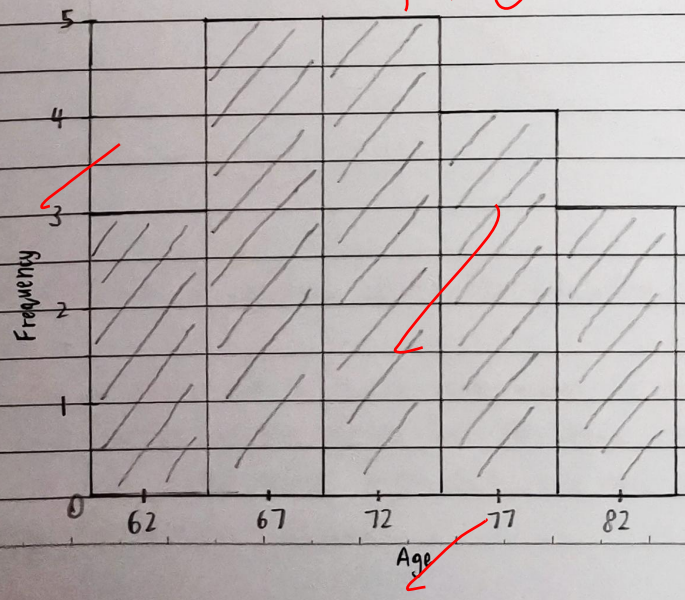
4.



3.5

Question 6

1. $\text{Median} = L + \frac{\frac{N}{2} - cf_p}{f_{med}}(w)$

$= 60.5 + \frac{\frac{100}{2} - 46}{25}(15)$

$= 62.90$

$\text{Mean} = \frac{(23\times3)+(38\times13)+(53\times30)+(68\times25)+(83\times14)+(98\times8)+(113\times4)+(128\times2)+(143\times1)}{100}$

$= \frac{6650}{100}$

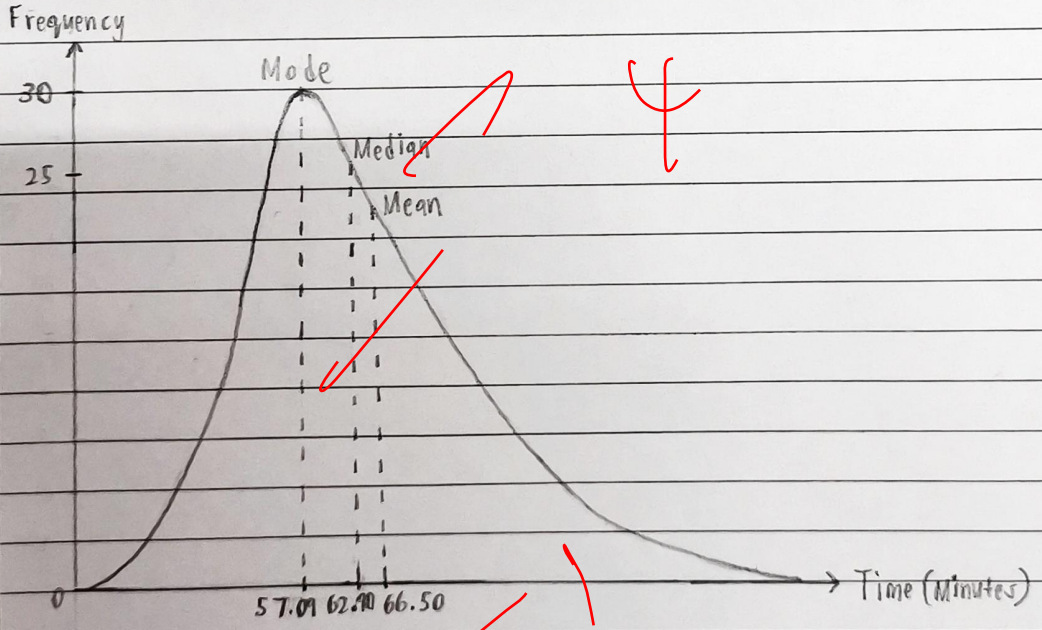
$= 66.50$

$\text{Mode} = l + h \times \left[(f_1 - f_0) \div (2f_1 - f_0 - f_2)\right]$

$= 45.5 + 15 \times \left[\frac{(30-13)}{2(30)-13-25}\right]$

$= 57.09$

2. a)



b) The distribution is positively skewed. This distribution is called leptokurtic.

c) As the distribution is a skewed graph, median is preferred as the measure of central tendency. Therefore, we can conclude that the average flight delay time is 61-75 minutes. Majority of the data revolves around 16-90 minutes with some rare cases revolving around 91-150 minutes, making the data more dispersed.