Quiz BIC 10603 S5S6S13

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1. State whether the data obtained from the observation or measurement of each of the following variables are discrete or continuous data.

   a) The age of a person. -continous data

   b) The number obtained when a fair die is thrown. -discrete data

   c) The time taken to run 100 metres. -Continuous data

   d) Set of negative integers, {-1, -2, -3,…}. -discrete data

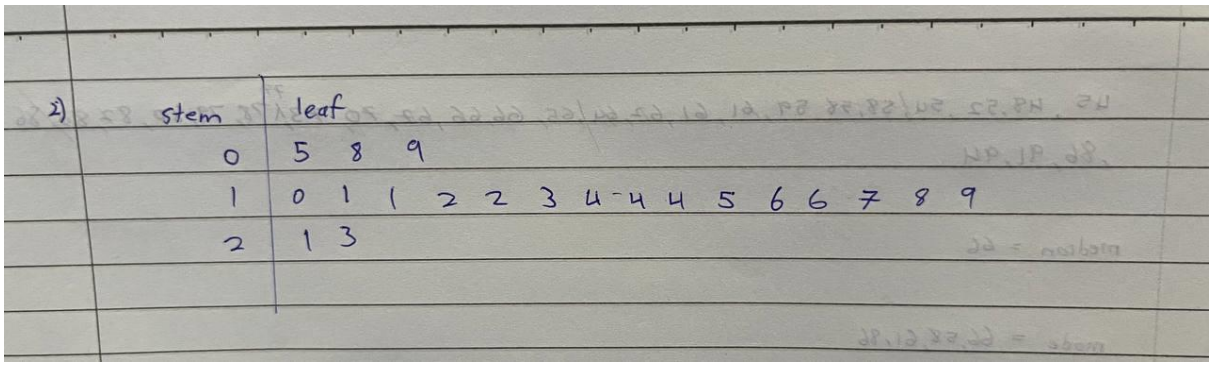
   e) The number of robberies reported per day. -discrete data

   f) The diameter of a tennis ball. -continous data

2. The number of days in a year group of 20 students are absent from school are given below. Display the data using an appropriate stem and leaf diagram.

   10 23 5 15 18 12 8 16 14 12 21 17 16 14 13 11 9 19 14 11

   Where the key : 16|1 means 17 days.



3. The grades on a statistics examination are as follows:

66	77	66	64	73	91	65	59	86
61	86	61	58	70	80	58	94	78
62	79	83	54	52	45	82	48	67

   a) Determine the number of classes for frequency distribution.

   b) Determine the size of class interval.

   c) Determine the mean, the median and the mode of final examination marks.

3) $n = 27$

$2^k \geq n = 27$

$2^5 \geq 27$

$32 \geq 27$

a) classes $= 5$

b) $94 - 45 = 49$

~~$49 \div 5$~~ size of class interval $= 49 \div 5$

$= 10$

c) $\Sigma x = 66 + 77 + 66 + 64 + 73 + 91 + 65 + 59 + 86 + 61 + 86 + 61 + 58 + 70 + 80 + 58 + 94 + 78 + 62 + 79 + 83 + 54 + 52 + 45 + 82 + 48 + 67$

$= 1865$

$\mu = \frac{1865}{27}$

$= 69.07$

45, 48, 52, 54, 58, 58, 59, 61, 61, 62, 64, 65, 66, 66, 67, 70, 73, 77, 78, 79, 80, 82, 83, 86, 86, 91, 94

median $= 66$

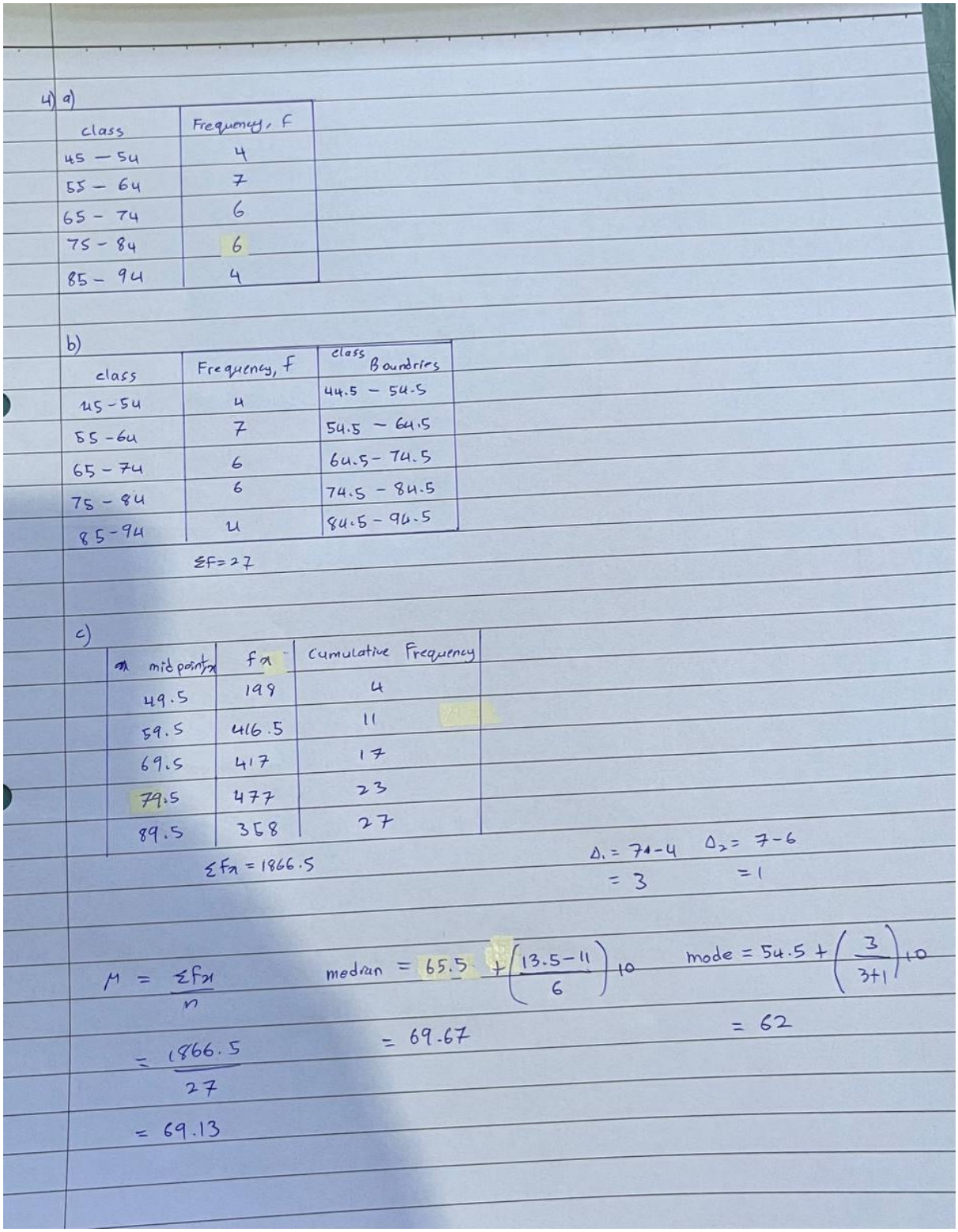
mode $= 66, 58, 61, 86$

4. Based on table in Q3.

   a) Construct a frequency distribution for the final examination marks.

   b) Calculate the class boundary for each class.

   c) Calculate the mean, the median and the mode of the grades-based frequency distribution.



4) a)

class	Frequency, f
45 – 54	4
55 – 64	7
65 – 74	6
75 – 84	6
85 – 94	4

b)

class	Frequency, f	class Boundries
45-54	4	44.5 – 54.5
55-64	7	54.5 – 64.5
65 – 74	6	64.5 – 74.5
75 – 84	6	74.5 – 84.5
85-94	4	84.5 – 94.5

$\Sigma F = 27$

c)

midpoint x	fx	Cumulative Frequency
49.5	198	4
59.5	416.5	11
69.5	417	17
79.5	477	23
89.5	358	27

$\Sigma fx = 1866.5$

$\Delta_1 = 7 - 4 = 3$ $\quad \Delta_2 = 7 - 6 = 1$

$\bar{x} = \frac{\Sigma fx}{n} = \frac{1866.5}{27} = 69.13$

$\text{median} = 65.5 + \left(\frac{13.5 - 11}{6}\right) 10 = 69.67$

$\text{mode} = 54.5 + \left(\frac{3}{3+1}\right) 10 = 62$