

Copying answers and steps are strictly forbidden. Evidence of copying results in zero for copied and copier. Working together is encouraged, share ideas not calculations. Explain your steps. The calculations and answers should be written neatly on paper which is attached as a single pdf. Box your answers where appropriate. Thanks!

Q-1

we considered the political party affiliations of the students in Professor Weiss's introductory statistics course.

The class levels of those students are as follows, where Fr, So, Jr, and Sr denote freshman, sophomore, junior, and senior, respectively.

So	So	Jr	Fr	Jr	So	Jr	So
So	So	Sr	So	Jr	Jr	Sr	Fr
Jr	Jr	So	Jr	Fr	Sr	Jr	So
Jr	Fr	Fr	Jr	Sr	So	Sr	Sr
So	Jr	So	Sr	So	So	Fr	So

- a) Determine frequency and relative frequency distribution table.
- b) Draw a bar chart and pie chart.

Q-2 For the following data sets use the specified grouping method.

- I. Find Frequency and relative frequency distribution table.
- II. Construct frequency histogram and relative frequency histogram.

- a) Following are data on the number of people per household for a sample of 40 households. Use single-value grouping.

2	5	2	1	1	2	3	4
1	4	4	2	1	4	3	3
7	1	2	2	3	4	2	2
6	5	2	5	1	3	2	5
2	1	3	3	2	2	3	3

- b) The following table gives one year's energy consumption for a sample of 50 households in the South. Data are in millions of BTUs. Use limit grouping with a first class of 40–49 and a class width of 10.

130	55	45	64	155	66	60	80	102	62
58	101	75	111	151	139	81	55	66	90
97	77	51	67	125	50	136	55	83	91
54	86	100	78	93	113	111	104	96	113
96	87	129	109	69	94	99	97	83	97

- c) A simple random sample of 35 new models yielded the following data on fuel tank capacity, in gallons. Use cutpoint grouping with 12 as the first cutpoint and classes of equal width 2.

17.2	23.1	17.5	15.7	19.8	16.9	15.3
18.5	18.5	25.5	18.0	17.5	14.5	20.0
17.0	20.0	24.0	26.0	18.1	21.0	19.3
20.0	20.0	12.5	13.2	15.9	14.5	22.2
21.1	14.4	25.0	26.4	16.9	16.4	23.0

Q-3 From the Web site, we obtained the following weights, in pounds, for the players on that basketball team for the 2008– 2009 season.

Obtain the following parameters for these weights.

- a. Mean b. Standard deviation
c. Median d. Mode e. IQR

175	240	265	280	235	200	210
210	245	230	218	180	225	215

Q4 The ages of 36 millionaires sampled are arranged in the following table

31	38	39	39	42	42	45	47	48
48	48	52	52	53	54	55	57	59
60	61	64	64	66	66	67	68	68
69	71	71	74	75	77	79	79	79

- Discuss five-number summary.
- Draw Stem and leaf plot (one line and two line per stem)
- Find adjacent values and the potential outlier if any.
- Construct the box plot.
- Discuss symmetry of the data.

Q-5 Construct a histogram, frequency polygon, and ogive using relative frequencies for the distribution (shown here) of the miles that 20 randomly selected runners ran during a given week.

Class boundaries	Frequency
5.5–10.5	1
10.5–15.5	2
15.5–20.5	3
20.5–25.5	5
25.5–30.5	4
30.5–35.5	3
35.5–40.5	2
	<u>20</u>

- Construct Histogram , frequency polygon and OGIVE.
- Find the mean, median and mode.
- Find sample variance and standard deviation for given frequency distribution table.

Due date: Tuesday, 12th September 2023

Assistant Prof: Jamilusmani