

1. Determine whether the data set is a population or sample.
 - a. The age of each member of the Parliament.
 - b. A survey of 100 spectators from a stadium with 1000 spectators.
 - c. The cholesterol levels of 20 patients in a hospital with 100 patients.
 - d. The number of televisions in each Malaysian household.

2. Identify each of the following variables as quantitative or qualitative.
 - a. Number of pets in a family.
 - b. County of residence.
 - c. Choice of car to buy.
 - d. Distance (in kilometres) of commute to work.
 - e. Choice of diet (vegetarian, non-vegetarian).
 - f. Ownership of personal computer (yes, no).
 - g. Number of people you know who have been elected to a political office.
 - h. The final exam score in a Probability class.

3. Identify each of the following variables as continuous or discrete.
 - a. The length of time to run a marathon.
 - b. The number of people in line at the tickets counter to purchase theater tickets.
 - c. The weight of a cat.
 - d. The number of people you have met yesterday.
 - e. The total playing time of a CD.
 - f. The number of courses for which a student can register.
 - g. The amount of money in your pocket.

4. The following data shows the favorite national car models of 50 MMU students.

Wira	Iswara	Kancil	Saga	Kenari
Kancil	Iswara	Kancil	Wira	Wira
Kancil	Kenari	Iswara	Wira	Saga
Kenari	Kancil	Saga	Iswara	Wira
Kancil	Wira	Kancil	Kancil	Iswara
Wira	Kenari	Saga	Kancil	Wira
Kancil	Kenari	Iswara	Kancil	Kancil
Wira	Saga	Kenari	Wira	Kancil
Wira	Kancil	Saga	Kancil	Wira
Wira	Kenari	Kancil	Wira	Kancil

- Prepare a frequency distribution table for these data.
 - Calculate the relative frequency and percentage distributions.
 - Draw a bar graph for the relative frequency distribution.
5. The weights (in gram) of 40 miniature candy bars are given as follow:
- | | | | | | | | |
|------|------|------|------|------|------|------|------|
| 20.5 | 22.7 | 23.6 | 25.2 | 21.4 | 23.3 | 24.5 | 22.5 |
| 22.6 | 20.8 | 25.1 | 24.1 | 22.9 | 22.0 | 25.9 | 23.5 |
| 23.6 | 24.9 | 21.0 | 22.9 | 24.3 | 25.8 | 22.1 | 24.8 |
| 24.9 | 23.6 | 22.7 | 21.0 | 25.6 | 24.5 | 23.4 | 26.7 |
| 20.7 | 22.6 | 23.9 | 25.1 | 21.5 | 23.1 | 24.8 | 26.1 |
- Group these data in a frequency distribution table by using the smallest value in the data set as the starting point.
Note: Use the HIGHER integer for the number of classes.
Round UP the class width to 1 decimal place.
 - Construct a histogram to visualize the distribution of weights.
 - Draw an ogive for the cumulative frequency.
Hence, find the percentage of candy bars with weight less than 25.4 grams.

6. The following table shows the number of letters per word for 30 selected words taken from a local novel.

Number of Letters	Frequency
10 – 12	2
12 – 14	3
14 – 16	4
16 – 18	5
18 – 20	7
20 – 22	4
22 – 24	3
24 – 26	2

- a. Represent these data by using a histogram and draw a polygon on the same graph.
b. Construct a cumulative frequency distribution and draw its graphical representation.
7. The following data is the number of summons issued to traffic offenders at Jalan Kuching for 12 consecutive days.
40 35 29 43 41 38 32 30 38 25 38 40
Obtain the values of:
a. the mean
b. the mode
c. the median
8. The following table shows the petrol consumption (RM per week) of 30 families.

Class	Frequency
0 – 49	1
50 – 99	5
100 – 149	6
150 – 199	11
200 – 249	5
250 – 299	2

Calculate:

- the mean
- the median
- the mode

9. An inspection of a sample of batik cloth shows the following number of defects on each piece.

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

From the above data, calculate, if possible:

- the mean,
- the range,
- the standard deviation.

10. The following data shows the ages of a group of workers in a factory.

Ages	Number of Workers
20 – 24	35
25 – 29	45
30 – 34	70
35 – 39	105
40 – 44	90
45 – 49	74
50 – 54	51
55 – 59	30

Calculate the mean and the standard deviation of ages of the workers from the above data.

11. The data below gives the weights (in kilogram) of a random sample of 30 patients in a hospital.

27	35	65	67	47	46	63	44	34	51
16	40	41	60	24	48	29	73	60	41
47	50	18	22	71	52	41	68	18	20

- Prepare a frequency distribution table for the above data and use the lowest value as the lower limit of the first class and the class width of size 10.
- Referring to the frequency distribution table constructed in part (a), find the mean, the median and the standard deviation for this data set.
- Construct a histogram, and estimate the mode from it.

Answer:

1. a. P b. S c. S d. P

2.

a. Quantitative	b. Quantitative	c. Qualitative	d. Quantitative
e. Qualitative	f. Qualitative	g. Quantitative	h. Quantitative

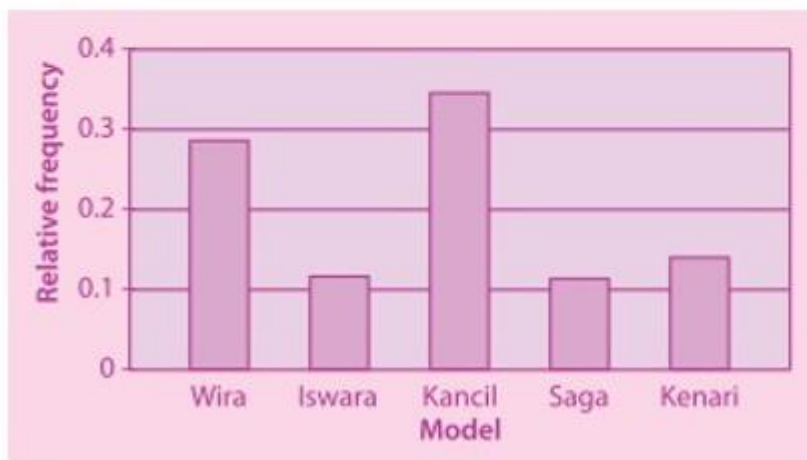
3.

a. Continuous	b. Discrete	c. Continuous	d. Discrete
e. Continuous	f. Discrete	g. Continuous	

4. a. & b. Frequency, relative frequency and percentage distribution

Model	Frequency	Tally	Relative Frequency	Percentage, %
Wira	14		0.28	28.00
Iswara	6		0.12	12.00
Kancil	17		0.34	34.00
Saga	6		0.12	12.00
Kenari	7		0.14	14.00
Total	50		1.00	100.00

- c. Bar graph



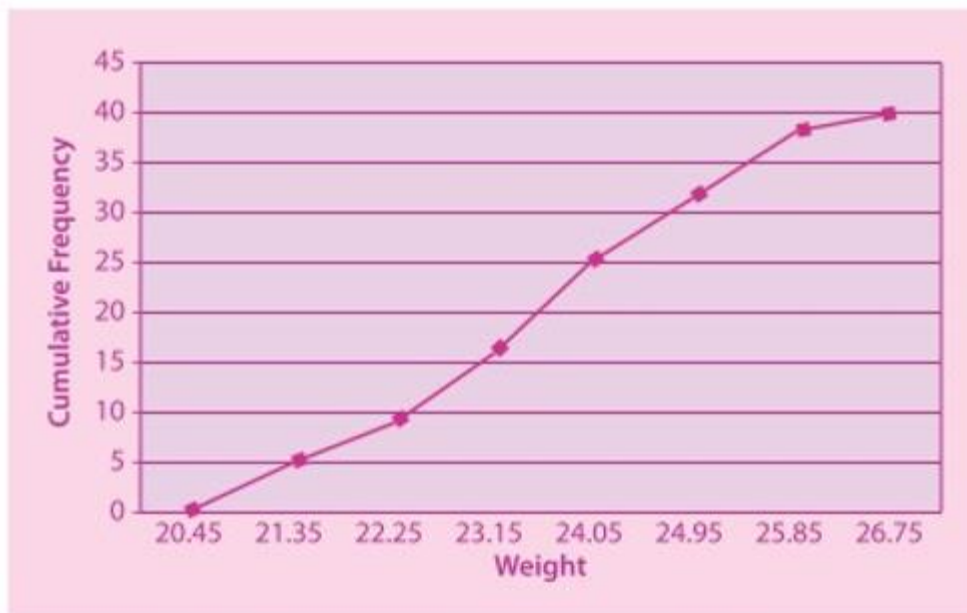
5. a. Frequency distribution table of 40 miniature candy bars

Class Limit	Class Boundary	Tally	f	Cumulative Frequency
20.5 – 21.3	20.45 – 21.35		5	5
21.4 – 22.2	21.35 – 22.25		4	9
22.3 – 23.1	22.25 – 23.15		8	17
23.2 – 24.0	23.15 – 24.05		7	24
24.1 – 24.9	24.05 – 24.95		8	32
25.0 – 25.8	24.95 – 25.85		5	37
25.9 – 26.7	25.85 – 26.75		3	40
			$\Sigma f = 40$	

b. Histogram

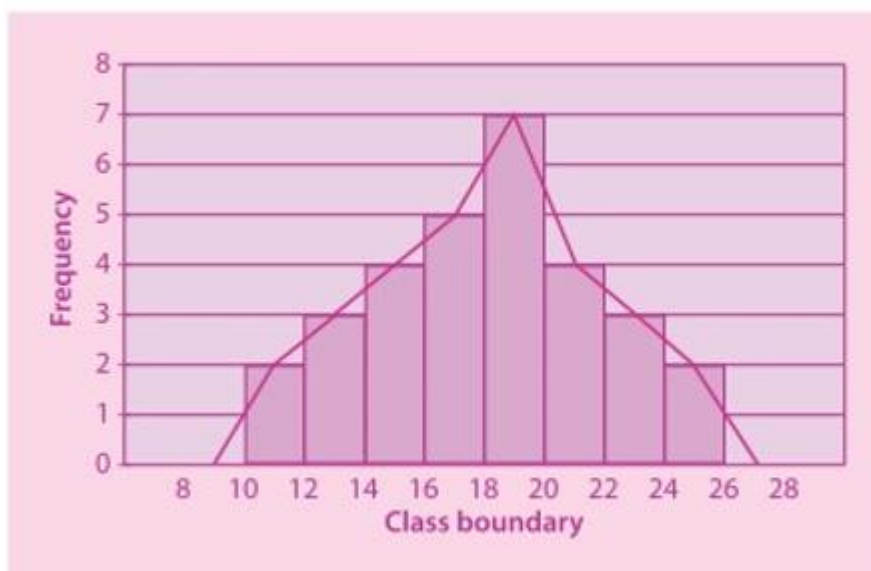


c.



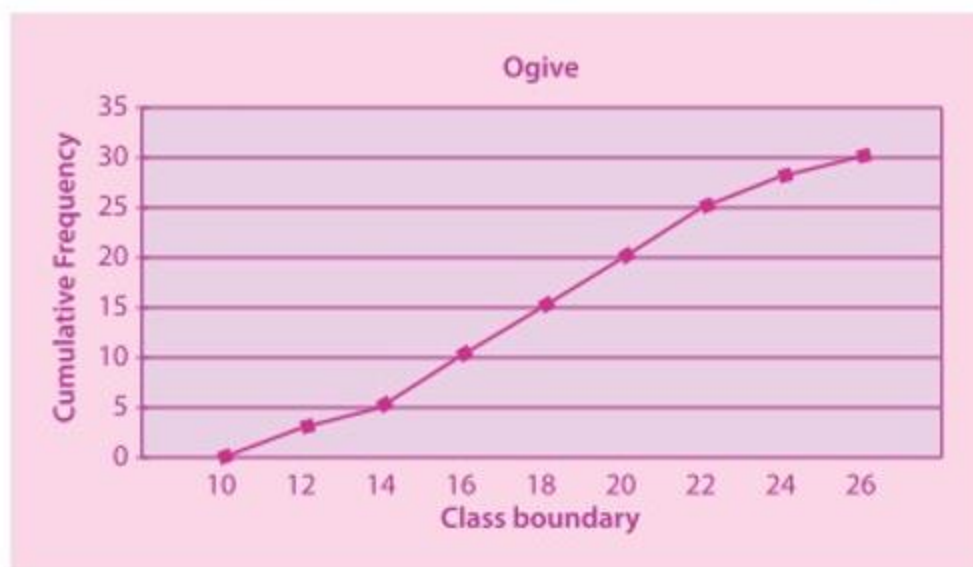
Percentage of candy bars with weight less than 25.4 g = 87.5%

6. a. Histogram and Polygon



b.

Class	f	Cumulative Frequency
10 - 12	2	2
12 - 14	3	5
14 - 16	4	9
16 - 18	5	14
18 - 20	7	21
20 - 22	4	25
22 - 24	3	28
24 - 26	2	30
Total	30	



7. a. 35.75 b. 38 c. 38
8. a. 157.83 b. 165.41 c. 172.22
9. a. 3.95 b. 9 c. 3.086
10. 39.46; 38; 8.93

11. a.

Classes	Class Boundary	f
16 – 25	15.5 – 25.5	6
26 – 35	25.5 – 35.5	4
36 – 45	35.5 – 45.5	5
46 – 55	45.5 – 55.5	7
56 – 65	55.5 – 65.5	4
66 – 75	65.5 – 75.5	4

b. 46.1667; 46.3571; 49.5; 16.9143

c. 49.5