ECONOMICS

BOOKS - VK GLOBAL PUBLICATION

ECONOMICS (HINGLISH)

ORGANISATION OF DATA

Illustration

1. Twenty students of Class XI have secured the following marks :

11, 12, 14, 11, 16, 11, 17, 16, 17, 14
17, 18, 20, 14, 20, 17, 20, 17, 14, 20.

Present the data as a frequency array.

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2. Following table offers an illustration of a frequency distribution. The table shows different class intervals (each showing a range of marks in Statistics) and the corresponding frequencies (each showing the number of students).

Frequency Distribution

Marks	Tally Bars	Frequency
10–15	𝍸	4
15–20	𝍸	5
20–25	𝍸 |	8
25–30	𝍸	5
30–35	𝍸	4
35–40	||	2
40–45	|	1
45–50	|	1

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3. Exclusive Series

Exclusive Series

Marks	Frequency
10–15	4
15–20	5
20–25	8
25–30	5
30–35	4
	Total = 26

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4. Convert Inclusive Series into Exclusive Series

Inclusive Series

Marks	Frequency
10–14	4
15–19	5
20–24	8
25–29	5
30–34	4
	Total = 26

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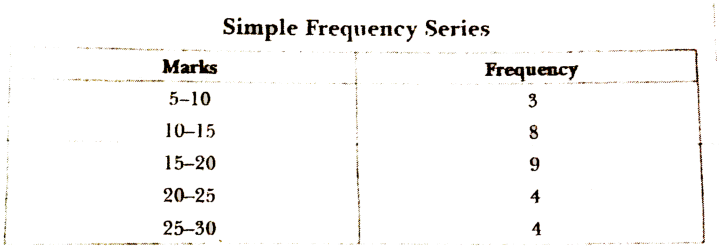
5. Simple Frequency Series



Simple Frequency Series

Marks	Frequency
5–10	3
10–15	8
15–20	9
20–25	4
25–30	4

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6. Convert the following cumulative frequency series into a simple frequency series.

4 students obtained less than 10 marks

20 students obtained less than 20 marks

40 students obtained less than 30 marks

48 students obtained less than 40 marks

50 students obtained less than 50 marks

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7. Illustration.

Mid-value	5	15	25	35	45
Frequency	6	5	11	9	8

Such series may be converted into simple frequency series using the following method:

(i) First, mutual difference between mid-values (i), is determined, and (ii) Second, the difference so obtained is reduced to half $\left(\frac{1}{2}i\right)$ which when deducted from the mid-value gives lower limit of the

class interval and when added to the mid-value gives the corresponding upper limit.

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8. Class mid-values of a frequency distribution of marks in economics of a group of students in Class XI are given as 25,32,39,46,53 and 60.

Find the size of the class interval and class limits.

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Miscellaneous Illustration

1. In a survey, it was found that 50 families bought milk in the following quantities in a particular month. Classify the following data in an individual, discrete, continuous and cumulative frequency series.

19	25	12	21	20
11	7	9	11	14
20	15	22	15	17
10	23	18	11	19
25	22	5	18	17
11	6	21	24	26
8	5	9	20	23
16	22	22	23	13
16	11	16	22	17
23	22	10	7	21

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2. Prepare a frequency series of the ages of 25 students of Class XI in your school .

15,16,16,17,18,18,17,15,15,16,16,17,15,16,16,15,16,16,15,17,17,18,19,19,15

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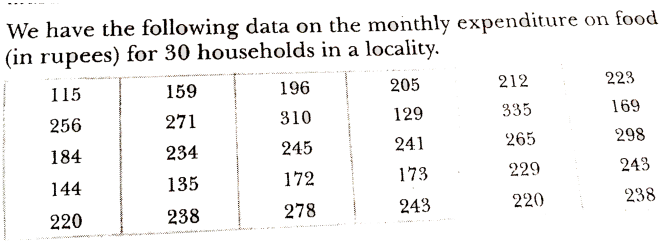
3. We have the following data on the monthly expenditure on food (in rupees) for 30 households in a locality.



We have the following data on the monthly expenditure on food (in rupees) for 30 households in a locality.

115	159	196	205	212	223
256	271	310	129	335	169
184	234	245	241	265	298
144	135	172	173	229	243
220	238	278	243	220	238

(i) Obtain a frequency distribution using following class intervals:

100-150, 150-200, 200-250, 250-300, 300-350

(ii) What percentage of households spends less than Rupees 250 per month and what percentage of

households spends more than Rupess 200 per month?

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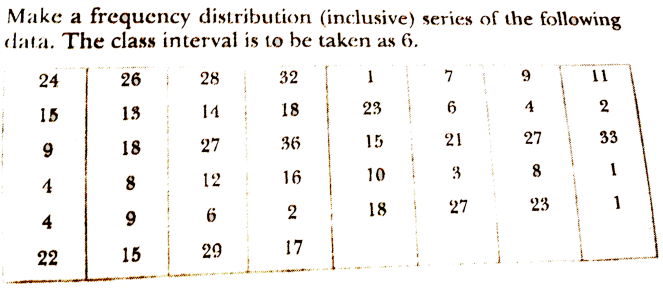
4. Make a frequency distribution (inclusive) series of the following data. The class interval is to be taken as 6.



Make a frequency distribution (inclusive) series of the following data. The class interval is to be taken as 6.

24	26	28	32	1	7	9	11
15	13	14	18	23	6	4	2
9	18	27	36	15	21	27	33
4	8	12	16	10	3	8	1
4	9	6	2	18	27	23	1
22	15	29	17				

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5. Convert the following cumulative frequency distribution into a simple frequency distribution

Marks	Number of Students
More than 0	55
More than 5	51
More than 10	43
More than 15	28
More than 20	16
More than 25	6
More than 30	0

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6. The following are the marks obtained by 30 students of Class XI in Statistics.

Marks out of 50					
15	10	8	7	6	11
20	12	14	16	18	13
0	5	4	7	9	17
8	16	18	19	20	0
24	28	26	25	29	4

Prepare a frequency distribution by taking a class interval of 5 on exclusive basis.

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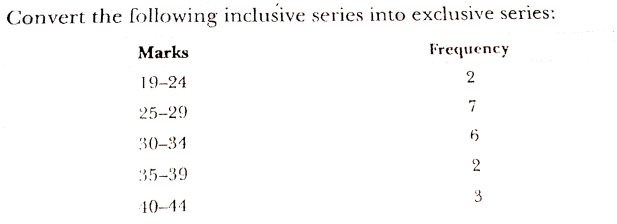
7. Convert the following inclusive series into exclusive series :



Convert the following inclusive series into exclusive series:

Marks	Frequency
19–24	2
25–29	7
30–34	6
35–39	2
40–44	3

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8. The monthly salary of some families in a society is given below :

The monthly salary of some families in a society is given below:

Monthly Salary (₹ in thousand)	No. of Families
10–20	6
20–30	9
30–40	12
40–50	17
50–60	11
60–70	5

(i) What is the lower limit of the second class interval?

(ii) What is the upper limit of the last class interval?

(iii) What is the class size of each class interval?

(iv) What is the mid-value of the third class interval?

(v) How many families earn Rs. 50,000 or more in a month?

(vi) How many families earn less than Rs. 20,000 in a month?

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9. Convert the following cumulative frequency distribution into a simple frequency distribution

Marks	Number of Students
More than 0	55
More than 5	51
More than 10	43
More than 15	28
More than 20	16
More than 25	6
More than 30	0

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10. Following are the marks obtained by 25 students in Statistics . Prepare a frequency distribution by

taking a class interval of 4 on exclusive basis.

5	6	8	10	11	13	6	8	5	13	8	10	3
18	6	8	5	16	11	8	5	8	5	8	6	

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11. For the following raw data prepare a frequency distribution with a class interval of 5 on inclusive basis :

Marks										
12	36	40	16	10	10	19	20	28	30	
19	27	15	21	33	45	7	19	20	26	
26	37	6	5	20	30	37	17	21	20	

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12. Convert the following series into a simple frequency distribution :

Convert the following series into a simple frequency distribution:

Marks	Number of Students
More than 0	21
More than 10	19
More than 20	14
More than 30	7
More than 40	2

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13. Convert the following series into a simple frequency distribution :

Convert the following series into a simple frequency distribution:

Mid-value	5	15	25	35	45	55
Frequency	2	8	15	12	7	6

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Exercise M C Q

1. Which of the following is the objective of classification?

A. Simplification

B. Briefness

C. Compatibility

D. All of these

Answer: B

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2. Classification of data on the basis of time period is called:

A. geographical classification

B. chronological classification

C. qualitative classification

D. quantitative classification

Answer: B

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3. The characteristic of a fact that can be measured in the form of numbers is called:

A. frequency

B. variable

C. attribute

D. none of these

Answer: B

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4. A series in which every class interval excludes items corresponding to its upper limit is called:

A. exclusive series

B. inclusive series

C. both (a) and (b)

D. none of these

Answer: A

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5. An open end series is that series in which:

A. lower limit of the first class interval is missing

B. upper limit of the last class interval is missing

C. both (a) and (b)

D. none of these

Answer: C

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6. Formula for finding mid-value is given by:

A. $l_2 - l_1$

B. $\frac{l_2 - l_1}{2}$

C. $l_1 + l_2$

D. $\frac{l_1 + l_2}{2}$

Answer: D

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7. According to tally bar method, which of the following symbols indicate the frequency of five?

A. 

B. 

C. 

D. 

Answer: C

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8. In a series, the number of times an item occurs is known as:

A. number

B. class frequency

C. frequency

D. cumulative frequency

Answer: C

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9. The difference between upper limit and lower limit of a class is known as :

A. range

B. magnitude of a class interval

C. frequency

D. class limits

Answer: B

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10. Which of the following equations is correct ?

A. s=r+n

B. s=r-n

C. s= r x n

D. $s = \frac{r}{n}$

Answer: D

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Exercise Fill In The Blank

1. Classification should be _____. (elastic / inelastic)

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2. _____ classification is according to attributes of the data. (Qualitative/Quantitative)

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3. Bivariate refers to a series of statistical data with _____. (two/ more than two)

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4. _____ is the average value of the upper and lower limits. (Cumulative frequency / Mid-value)

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5. The extreme values of a class are _____. (magnitude / limits)

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6. An _____ series is that series which includes all items upto its upper limit. (inclusive / exclusive)

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7. In _____ , lower limit of the first class interval and the upper limit of the last class is not given . (open end series / mid - value series)

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Exercise True And False

1. Raw data are collected by investigator during the investigation. (True/False)

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2. The number of variables or items that come under any class is called class frequency (True/False)

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3. Arranging the data in different classes according to a given order is called 'series'. (True / False)

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Exercise Concept Based Objective

1. What is meant by classification?

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2. Define a variable.

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3. What is meant by individual series?

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4. What is a discrete series?

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5. What is meant by a continuous series or frequency distribution?

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6. What is meant by frequency?

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7. What are the class limits?

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8. What is meant by magnitude of a class interval?

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9. What is meant by exclusive series?

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10. What is meant by inclusive series?

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11. What is an open end series?

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12. What is meant by cumulative frequency series?

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13. What is meant by mid-values frequency series?

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Exercise Short Answer

1. What is meant by statistical series? Give the names of statistical series.

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2. What is meant by classification of data? State its objectives

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3. What are the four main merits of classification?

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4. What is frequency distribution? What are the main points underlying the construction of a frequency distribution?

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5. What are the different types of frequency distribution?

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6. Describe the concept of individual series. Give one example.

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7. Describe the concept of discrete series Give one example.

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8. Describe the concept of continuous series. Give one example.

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9. Describe the concept of cumulative frequency. Give one example

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10. Distinguish between (i) continuous, and (ii) discrete variables. Explain with examples

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11. What is meant by inclusive series? Illustrate with one example.

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12. What is meant by exclusive series? Illustrate with one example

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Exercise Long Answer

1. What do you mean by classification? Explain its various objectives.

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2. Discuss the different methods of classification of data.

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3. What is meant by statistical data? Explain and illustrate various types of statistical series.

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4. Explain the concepts of:

(i)Class interval,

(ii)Individual series,

(iii)Frequency array, and

(iv) Frequency distribution.

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5. What is statistical classification? What is the importance of such a classification?

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6. Explain with examples two ways of presenting cumulative frequency series

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7. How many classes should we choose? How does one decide about the size of class intervals?

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Exercise Essential Practicals

1. The following data is of the age of 25 students of Class XI :

15	16	16	17	18	18	17	15	15	16	16	17	15
16	15	16	16	18	15	17	17	18	10	16	15	

Arrange these data in the form of a frequency distribution.

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2. Weight of 20 students is given in kilograms. Using class interval of 5, make a frequency distribution.

30	45	26	25	42	33	15	35	45	45
45	39	42	40	18	35	41	20	36	48

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3. In the following statement, take the number of letters in a word as items and number of times a word (of the same size) repeats itself as frequencies. Prepare a discreate series.

"Success in the examination confers no absolute right to appointment unless government is satisfied after such an equiry as may be considered necessary that the candidate is suitable in all respects for appointment. "

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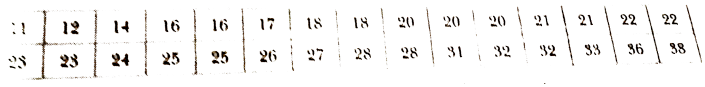
4. An economic survey revealed that 30 families in a town incur following expenditure in a day (rupees)



11	12	14	16	16	17	18	18	20	20	20	21	21	22	22
23	23	24	25	25	26	27	28	28	31	32	32	33	36	38

(i)Convert these data in the form of a frequency distribution, using the following class intervals.

10-14,15-19,20-24,25-29,30-34 and 35-39 .

(ii)How many families spend more than 29 rupees a day ?

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Exercise Ncert

1. The class mid-point is equal to

A. the average of the upper class limit and the lower class limit

B. the product of upper class limit and the lower class limit

C. the ratio of the upper class limit and the lower class limit

D. none of the above

Answer: A

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2. The frequency distribution of two variables is known as

A. univariate distribution

B. bivariate distribution

C. multivariate distribution

D. none of the above

Answer: B

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3. Statistical calculations in classified data are based on

A. the actual values of observations

B. the upper class limits

C. the lower class limits

D. the class midpoints

Answer: D

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4. Under exclusive method:

A. the upper class limit of a class is excluded in the class interval

B. the upper class limit of a class is included in the class interval

C. the lower class limit of a class is excluded in the class interval

D. the lower class limit of a class is included in the class interval

Answer: A::D

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5. Range is the

A. difference between the largest and the smallest observations

B. difference between the smallest and the largest observations

C. average of the largest and the smallest observations

D. ratio of the largest to the smallest observation

Answer: A

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6. What is a variable? Distinguish between a discrete and a continuous variable.

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7. Explain the 'exclusive' and 'inclusive methods' used in classification of data.

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8. Use the data in following table that relate to monthly household expenditure (in Rs.) on food of 50 households, and

(i) Obtain the range of monthly household expenditure on food.

(ii) Divide the range into appropriate number of class intervals and obtain the frequency distribution of expenditure.

(iii) Find the number of households whose monthly expenditure on food is

(a) less than Rs. 2,000, (b) more than Rs. 3,000, (c) between Rs. 1,500 and Rs. 500.

Monthly Household Expenditure (in ₹) on Food of 50 Households

1,904	1,559	3,473	1,735	2,760
2,041	1,612	1,753	1,855	4,439
5,090	1,085	1,823	2,346	1,523
1,211	1,360	1,110	2,152	1,183
1,218	1,315	1,105	2,628	2,712
4,248	1,812	1,264	1,183	1,171
1,007	1,180	1,953	1,137	2,048
2,025	1,583	1,324	2,621	3,676
1,397	1,832	1,962	2,177	2,575
1,293	1,365	1,146	3,222	1,396

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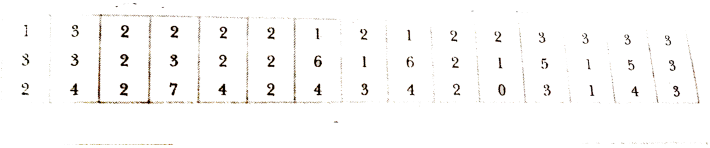
9. In a city 45 families were surveyed for the number of domestic appliances they used. Prepare a frequency array based on their replies as recorded below .



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

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10. What is 'loss of information ' in classified data ?

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11. Do you agree that classified data is better than raw data?

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12. Distinguish between univariate and bivariate frequency distribution.

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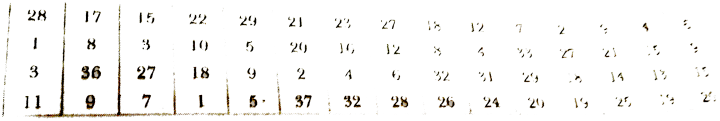
13. Prapare a frequency distribution by inclusive method taking class interval of 7 from the following

data :



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