



MATHS

BOOKS - SUPER COMPANION MADE EASY

STATISTICS

Exercise 13 1

1. A survey was conducted by a group of students as a part of their environment

awareness programme, in which they collected the following data regarding the number of plants in 20 houses in a locality. Find the mean number of plants per house.

Number of plants	0 – 2	2 – 4	4 – 6	6 – 8	8 – 10	10 – 12	12 – 14
Number of houses	1	2	1	5	6	2	3

Which method did you use for finding the mean, and why?



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2. Consider the following distribution of daily wages of 50 workers of a factory.

Daily wages (in ₹)	100–120	120–140	140–160	160–180	180–200
Number of workers	12	14	8	6	10

Find the mean daily wages of the workers of the factory by using an appropriate method.



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3. The following distribution shows the daily pocket allowance of children of a locality. The mean pocket allowance is Rs 18. Find the missing frequency f .



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4. Thirty women were examined in a hospital by a doctor and the number of heartper minute were recorded and summarized as follows. Find the mean heart beats per minute for these women, choosing a suitable method.

Number of heart beats per minute	65–68	68–71	71–74	74–77	77–80	80–83	83–86
Number of womens	2	4	3	8	7	4	2



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5. In a retail market, fruit vendors were selling mangoes kept in packing boxes. These boxes

contained varying number of mangoes. The following was the distribution of mangoes according to the number of boxes.

Number of mangoes	50–52	53–55	56–58	59–61	62–64
Number of boxes	15	110	135	115	25

Find the mean number of mangoes kept in a packing box. Which method of finding the mean did you choose?



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6. The table below shows the daily expenditure on food of 25 households in a locality.

Daily expenditure (in ₹)	100–150	150–200	200–250	250–300	300–350
Number of house holds	4	5	12	2	2

Find the mean daily expenditure on food by a suitable method.



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7. To find out the concentration of SO_2 in the air (in parts per million, i.e., ppm), the data was collected for 30 localities in a certain city and is presented below:

Concentration of SO_2 (in ppm)	Frequency (f)
0.00 – 0.04	4
0.04 – 0.08	9
0.08 – 0.12	9
0.12 – 0.16	2
0.16 – 0.20	4
0.20 – 0.24	2

Find the mean concentration of SO_2 in the air.



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8. A class teacher has the following absentee record of 40 students of a class for the whole term. Find the mean number of days a student

was absent.

Number of days	0-6	6-10	10-14	14-20	20-28	28-38	38-40
Number of students	11	10	7	4	4	3	1



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9. The following table gives the literacy rate (in percentage) of 35 cities. Find the mean literacy rate

Number of days	45-55	55-65	65-75	75-85	85-95
Number of students	3	10	11	8	3



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Exercise 13 2

1. The following table shows the ages of the patients admitted in a hospital during a year:

Age (in years)	5–15	15–25	25–35	35–45	45–55	55–65
Number of patients	6	11	21	23	14	5

Find the mode and the mean of the data given above. Compare and interpret the two measures of central tendency.



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2. The following data gives the information on the observed lifetimes (in hours) of 225 electrical components

Lifetimes (in hours)	0–20	20–40	40–60	60–80	80–100	100–120
Frequency	10	35	52	61	38	29

Determine the modal lifetimes of the components.



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3. The following data gives the distribution of total monthly household expenditure of 200

families of a village. Find the modal monthly expenditure of the families. Also, find the mean monthly expenditure :

Expenditure (in ₹)	Number of families
1000 - 1500	24
1500 - 2000	40
2000 - 2500	33
2500 - 3000	28
3000 - 3500	30
3500 - 4000	22
4000 - 4500	16
4500 - 5000	7



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4. The following distribution gives the state-wise teacher-student ratio in higher secondary

schools of India. Find the mode and mean of this data. Interpret the two measures.

Number of students per teacher	Number of states / U.T.
15–20	3
20–25	8
25–30	9

30–35	10
35–40	3
40–45	0
45–50	0
50–55	2



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5. The given distribution shows the number of runs scored by some top batsmen of the world

in one-day international cricket matches.

Runs scored	Number of batsmen
3000 – 4000	4
4000 – 5000	18
5000 – 6000	9
6000 – 7000	7
7000 – 8000	6
8000 – 9000	3
9000 – 10000	1
10000 – 11000	1

Find the mode of the distribution.



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6. A student noted the number of cars passing through a spot on a road for 100 periods each of 3 minutes and summarised it in the table given below. Find the mode of the data.



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Exercise 13.3

1. The following frequency distribution gives the monthly consumption of electricity of 68 consumers of a locality. Find the median, mean

and mode of the data and compare them.

Monthly consumption (in units)	Number of consumers
65–85	4
85–105	5
105–125	13
125–145	20
145–165	14
165–185	8
185–205	4



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2. If the median of the distribution given below is 28.5, find the values of x and y .

Monthly consumption (in units)	Number of consumers
0–10	5
10–20	x
20–30	20
30–40	15
40–50	y
50–60	5
Total	60



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3. A life insurance agent found the following data for distribution of ages of 100 policy holders. Calculate the median age, if policies are given only to persons having age 18 years onwards but less than 60 year.

Age (in years)	Number of policy holders
Below 20	2
Below 25	6
Below 30	24
Below 35	45
Below 40	78

Below 45	89
Below 50	92
Below 55	98
Below 60	100



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4. The lengths of 40 leaves of a plant are measured correct to the nearest (millimeter, and the data obtained is represented in the

following table

Length (in mm)	Number of leaves
118–126	3
127–135	5
136–144	9
145–153	12
154–162	5
163–171	4
172–180	2

Find the median length of the leaves.

(Hint: The data needs to be converted to continuous classes for finding the median, since the formula assumes continuous classes.

The classes then change to 117.5-126.5, 126.5-135.5, ..., 171.5-180.5.)



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5. The following table gives the distribution of the life time of 400 neon lamps :

Life time (in hours)	Number of lamps
1500–2000	14
2000–2500	56
2500–3000	60
3000–3500	86
3500–4000	74
4000–4500	62
4500–5000	48

Find the median life time of a lamp



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6. 100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the English alphabets in the surnames was obtained as follows:

Number of letters	1-4	4-7	7-10	10-13	13-16	16-19
Number of surnames	6	30	40	16	4	4

Determine the median number of letters in the surnames. Find the mean number of letters in the surnames? Also, find the modal size of the surnames.



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7. The distribution below gives the weights of 30 students of a class. Find the median weight of the students.

Weight (in kg)	40–45	45–50	50–55	55–60	60–65	65–70	70–75
Number of students	6	30	40	16	4	4	2



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Exercise 13 4

1. The following distribution gives the daily income of 50 workers of a factory.

Daily income (in ₹)	100–120	120–140	140–160	160–180	180–200
Number of students	12	14	8	5	10

Convert the distribution above to a less than type cumulative frequency distribution, and draw its ogive.



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2. During the medical check-up of 35 students of a class, their weights were recorded as

follows:

Daily income (in ₹)	Cumulation frequency
Less than 38	0
Less than 40	3
Less than 42	5
Less than 44	9
Less than 46	14
Less than 48	28
Less than 50	32
Less than 52	35

Draw a less than type ogive for the given data.

Hence obtain the median weight from the graph and varify the result by using the formula.



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3. The following table gives production yield per hectare of wheat of 100 farms of a village.

Production yield (in kg/ha)	50–55	55–60	60–65	65–70	70–75	75–80
Number of farms	2	8	12	24	38	16

Change the distribution, and draw its ogive



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