

Class X
Mathematics
Chapter-14 STATISTICS Module 2 / 4
Worksheet

Find the mean of the following data

a. 5,6,4,8,7,9,6,5,4,5,6,8

Ans

$$\begin{aligned}\text{Mean} &= \frac{\text{sum of all observation}}{\text{total number of observation}} \\ &= \frac{5+6+4+8+7+9+6+5+4+5+6+8}{12} \\ &= \frac{73}{12} \\ &= 6.08\end{aligned}$$

b. 8,4,5,7,7,,8,6,8,9,5,6,8,9,5,6

c. 14,12,13,15,14,12,16,14,15,14

d. 25,15,25,35,15,15,45,35,45,25

Mean of group data

Direct Method

$$\text{Mean} = \frac{\sum f x}{\sum f}$$

Assume Mean Method

$$\text{Mean} = A + \frac{\sum f d}{\sum f}$$

Find the mean of the given data

a. Find by direct and assumed mean method

Class	10-30	30-50	50-70	70-90	90-110	110-130
Frequency	5	8	12	20	3	2

Mean by Direct Method

Class	Frequency (f)	Class Mark (x)	f.x
10-30	5	20	100
30-50	8	40	320
50-70	12	60	720
70-90	20	80	1600
90-110	3	100	300
110-130	2	120	240
	$\sum f = 50$		$\sum f x = 3280$

$$\begin{aligned} \text{Mean} &= \frac{\sum f x}{\sum f} \\ &= \frac{3280}{50} \\ &= 65.6 \end{aligned}$$

Mean by Assume Mean Method

Class	Frequency (f)	Class Mark (x)	Deviation (d = x - A)	f.d
10-30	5	20	- 40	-200
30-50	8	40	- 20	-160
50-70	12	60=A	00	00
70-90	20	80	20	400
90- 110	3	100	40	120
110- 130	2	120	60	120
	$\Sigma f = 50$			$\Sigma fd = 280$

$$\begin{aligned}
 \text{Mean} &= A + \frac{\Sigma f d}{\Sigma f} \\
 &= 60 + \frac{280}{50} \\
 &= 60 + 5.6 \\
 &= 65.6
 \end{aligned}$$

b. Find mean by direct and Assumed mean method

Class	00-20	20-40	40-60	60-80	80-100	100-120
Frequency	5	8	10	12	7	8

c. Find mean by direct and Assumed mean method

Class	10-30	30-50	50-70	70-90	90-110	110-130
Frequency	6	8	10	12	6	5

d. Find mean by direct and Assumed mean method

Class	50-52	52-54	54-56	56-58	58-60	60-62	62-64
Frequency	18	21	17	28	16	35	15

e. Find mean by direct and Assumed mean method

Class	0-6	6-12	12-18	18-24	24-30	30-36	36-42
Frequency	10	11	7	4	4	3	1

Exercise 14.1

I. Very Short Answer Type Questions

1. Find the mean of first 10 natural numbers.
2. Find the class mark of class 25–35.
3. Find the mean of first ten odd natural numbers.

II. Short Answer Type Questions - I

4. If the mean of the following data is 20.6, find the value of p .

x	10	15	p	25	35
f	3	10	25	7	5

5. Find the value of p , if the mean of the following distribution is 20.

x	15	17	19	$20+p$	23
f	2	3	4	5	6

6. If the mean of the following data is 18.75, find the value of p .

x	10	15	p	25	30
f	5	10	7	8	2

7. The following table gives the number of children of 250 families in town:

<i>No. of children</i>	0	1	2	3	4	5	6
<i>No. of families</i>	15	24	29	46	54	43	39

Find the average number of children per family.

8. Find the mean of the distribution:

<i>Class</i>	1–3	3–5	5–7	7–10
<i>Frequency</i>	9	22	27	17

III. Short Answer Type Questions - II

9. For the following distribution, calculate mean:

<i>Class</i>	25–29	30–34	35–39	40–44	45–49	50–54	55–59
<i>Frequency</i>	14	22	16	6	5	3	4

10. The mean of the following frequency distribution is 62.8 and sum of all frequencies is 27. Find the values of f_1 and f_2 .

<i>Class</i>	0–20	20–40	40–60	60–80	80–100	100–120
<i>Frequency</i>	5	f_1	10	f_2	7	8

13. The following distribution shows the daily pocket allowance of children of a local pocket allowance is ₹ 18. Find the missing frequency f .

Daily pocket allowance (in ₹)	11-13	13-15	15-17	17-19	19-21	21-23
Number of children	7	6	9	13	f	5

14. A class teacher has the following absentee record of 40 students of a class for the week. Find the mean number of days a student was absent.

Number of days	0-6	6-10	10-14	14-20	20-28	28-34
Number of students	11	10	7	4	4	3

IV. Long Answer Type Questions

15. The mileage (km per litre) of 50 cars of the same model was tested by a manufacturer. The results are as follows:

Mileage (km/l)	10-12	12-14	14-16	16-18
No. of Cars	7	12	18	13

Find the mean mileage. The manufacturer claimed that the mileage of the model was 14 km per litre. Do you agree with this claim?

[NCERT]

16. An aircraft has 120 passenger seats. The number of seats occupied during 100 flights is as follows:

No. of seats	100-104	104-108	108-112	112-116	116-120
Frequency	15	20	32	18	15

Determine the mean number of seats occupied over the flights.

[NCERT]

17. The distribution given below shows the number of runs taken by batsmen in one-day international matches. Find the mean number of runs by choosing a suitable method.

No. of Runs	0-40	40-80	80-120	120-160	160-200
Number of batsman	12	20	35	30	23

18. The table given below shows the percentage distribution of female technicians in various states and union territories (U.T.) of India. Find the mean percentage of female technicians by the step deviation method.

Percentage of female technicians	10-15	15-20	20-25	25-30	30-35
Number of states - U.T.	5	6	8	12	6

The following data for a factory are tabulated as follows: