

Profit and Loss of a firm for the last five years is as follows :

1st year : ₹ 30,000, 2nd year ₹ 40,000; 3rd year ₹ 45,000, 4th year ₹ 25,000 (Loss), 5th year ₹ 36,000.
[Ans. ₹ 25,200]

PRACTICAL PROBLEMS

Individual Series

1. (A) Find out the mean from the following data :
Income ₹ 50, 100, 200, 500, 2,000, 3,000, 4,000.
[Ans. ₹ 1,407.14]
- (B) Calculate the Simple Arithmetic Mean of the following numbers :
28, 34, 39, 42, 50, 53, 54, 59.
[Ans. 44.875]
- (C) Find the mean of 14, 3, 0, 4, 5, 6.
[Ans. $\bar{X} = 5.33$]
2. Find the Arithmetic Mean of 20.35, 15.75, 16.5, 34.95, 25.75, 27.04.
[Ans. 23.39]
3. Compute the arithmetic average of the following items :
(i) 25, 0.405, 3.245, 0.0832
(ii) 25, 0.3005, 4.81, 0.1003
[Ans. (i) 7.1833, (ii) 7.5527]
4. The following are the ten measured value of X : 20.6, 19.8, 21.1, 21.8, 21.7, 24.7, 21.4, 21.5, 21.2, 21.0. Find (i) the average of the first six measurements, (ii) the average of the last six measurements.
[Ans. (i) 21.616̄, (ii) 21.916̄]

5. The following are the monthly salaries in rupees of 12 families. Calculate the Arithmetic Mean :

S. No.	1	2	3	4	5	6	7	8	9	10	11	12
Income	280	180	96	98	104	75	80	94	100	75	600	200

[Ans. ₹ 165.17]

6. Calculate the Mean of the following data :

S. No.	1	2	3	4	5	6	7	8	9	10	11	12
Size	96	180	98	75	270	80	102	100	94	75	200	610

[Ans. 165]

Discrete Series

7. (i) From the following frequency distribution find out Mean height of the students :

Height (in cm)	160	162	164	166	168	170	172
No. of Students	5	10	15	30	25	10	5

[Ans. 166.2 cm.]

(ii) The following data relate to sizes of shoes sold at a store during the given week. Find the average size by the short-cut method :

Size of Shoes	4	5	6	7	8	9	10
No. of Shoes	15	30	45	60	55	40	5

[Ans. 7]

8. (i) Students of a school contributed towards National Defence Fund as follows :

Students	Contribution per Student (in ₹)
10	5
15	4
24	3
30	2
21	1

Find out the Mean Contribution.

[Ans. $\bar{X} = ₹ 2.63$.]

- (ii) Below are the number of children of certain locality :

No. of Children	8	7	6	5	4	3	2	1	0
No. of Families	1	2	6	8	20	38	60	60	35

Find Arithmetic Mean.

[Ans. $\bar{X} = 2.052$]

- (iii) Calculate the Mean number of accidents per driver from the following :

No. of Accidents	0	1	2	3	4	5	6	7	8
No. of Drivers	45	36	40	19	12	8	3	2	1

[Ans. $\bar{X} = 1.813$]

- (iv) A market survey on demands of Modern Bread at a shop in a locality provided the following distribution of daily demand :

Daily Demand	Frequency
12	36
17	160
21	92
27	56
30	26
Total	370

Find the average demand per day.

[Ans. 19.93 Breads]

Continuous Series

9. Find Mean from the following data :

Class	10—20	20—30	30—40	40—50	50—60	60—70
Frequency	15	18	27	14	9	7

[Ans. $\bar{X} = 35.55$]

10. Calculate mean from the following table :

Class	0—4	5—9	10—14	15—19	20—24	25—29
Frequency	12	17	35	18	8	2

[Ans. $\bar{X} = 11.95$]

11. Find out simple arithmetic mean from the following data :

Profit per Shop (in ₹)	0—10	10—20	20—30	30—40	40—50
No. of Shops	12	18	21	20	9

[Ans. ₹ 24.50]

12. Calculate mean from the following table :

Class	8—14	14—20	20—26	26—32	32—38
Frequency	30	40	20	10	5

[Ans. ₹ 18.42]

13. Find out the mean of the following data :

Age in Years	20—30	30—40	40—50	50—60	60—70	70—80
No. of Men	12	18	42	54	45	15

14. (A) Calculate the arithmetic mean by short-cut method :

Age in Years	18—22	23—27	28—32	33—37	38—42	43—47	48—52	53—57
No. of Persons	14	28	33	30	20	15	13	7

[Ans. $\bar{X} = 34.56$ years]

6. Calculate the mean from the following frequency table:

x	4-10	11-15	16-20	21-25	26-30
Frequency	20	30	50	40	10

[Ans. $\bar{X} = 17.87$]

7. From the following table, find the mean by step deviation method:

Income (in ₹)	No. of Persons
1000-2000	15
2000-3000	33
3000-4000	63
4000-5000	83
5000-6000	100

[Ans. $\bar{X} = ₹ 3,580$]

8. Calculate the mean:

Marks	Students
Less than 20	5
Less than 30	13
Less than 40	28
Less than 50	46
Less than 60	49
Less than 70	50

[Ans. $\bar{X} = 38.8$ Marks]

9. Calculate the arithmetic mean:

Marks	Students
More than 10	50
More than 20	42
More than 30	36
More than 40	20
More than 50	7
More than 60	3

[Ans. $\bar{X} = 36.6$ Marks]

10. Calculate arithmetic mean of the following data:

Daily Wages (in ₹)	No. of Workers
Below 80	10
80-85	12
85-90	14
90-95	11
95-100	20
100-105	20
105-110	11
Above 110	2

[Ans. $\bar{X} = ₹ 94.15$]

11. Unknown Value or Frequency

19. In the following frequency distribution locate the missing frequency if the arithmetic mean of the series is 67.45:

Height	60-62	63-65	66-68	69-71	72-74
Frequency	15	54	?	81	24

[Ans. Missing Frequency = 126]

Correcting the Result

26. The arithmetic mean of 15 values was calculated as 20.2. Later, it was found that two values 23 and 35 were wrongly taken as 32 and 53. Find the correct mean.
[Ans. Correct Mean 18.4]
27. The average marks secured by 50 students was 44. Later on, it was found that a score of 36 was misread as 56. Find the correct average marks obtained by the students.
[Ans. Correct Marks 43.6]
28. The arithmetic mean of weekly income of 50 families is ₹ 2,800. But in course of counting the income of one family of ₹ 2,050 was misread as ₹ 2,500. Find the correct arithmetic mean.
[Ans. ₹ 2,791]
29. The average marks secured by 100 students was 80. Later on, it was found that marks of two students 93 and 58 were misread as 39 and 85. Find the correct average marks secured.
[Ans. $\bar{X} = 80.27$]

Combined Arithmetic Mean

30. The means of three samples of sizes 200, 250 and 300 are 25, 10 and 15 respectively. Find out the mean of the combined distribution.
[Ans. 16]
31. The average income of 100 labourers is ₹ 50 per day and the average income of 150 labourers is ₹ 60 per day. Find the combined mean of income of 250 labourers.
[Ans. ₹ 56]
32. Find the combined mean marks from the following data given below :
 $N_1 = 60, \bar{X} = 400$ marks; $N_2 = 40, \bar{X}_2 = 450$ marks
[Ans. 420 Marks]
33. The average income of 100 labourers is ₹ 200. If the average income of all 150 labourers is ₹ 250. Calculate the average income of remaining 50 labourers.
[Ans. $\bar{X} = ₹ 350$]
34. The average run scored by Australian Team in a match consisting of 10 players is 50 and the average run of Indian Team of 11 players is 42. Find the combined average run scored by both the teams.
[Ans. Combined Mean = 45.8 Runs]

Miscellaneous Problems

35. The pass out result of 50 students who took up a class test is given below :

Marks	4	5	6	7	8	9
No. of Students	8	10	9	6	4	3

If the average marks for all the 50 students were 5.16, find out the average marks of the students who failed.

[Ans. \bar{X} of students who failed = 2.1]

36. Find the mean in the following table :

Class	10—15	15—20	20—25	25—30	30—35
Frequency	10	18	32	18	12

[Ans. $\bar{X} = 22.72$]

37. Find the arithmetic mean in the following table :

Class	0—9	10—19	20—29	30—39	40—49
Frequency	4	6	10	8	2

[Ans. $\bar{X} = 23.83$]

38. Find the arithmetic mean in the following table :

Class	0—5	5—10	10—15	15—20	20—25
Frequency	3	7	15	13	7

[Ans. $\bar{X} = 14.06$]

39. Find the arithmetic mean of 120, 150, 280, 250 and show that the sum of the deviations of the items from mean is 0.

[Ans. A. M. 200]