1. Find the mean of the following data.

(a) 9, 7, 11, 13, 2, 4, 5, 5

Sum=9+7+11+13+2+4+5+5 =56
N=8
Mean=Sum/N=56/8 =7

(b) 16, 18, 19, 21, 23, 23, 27, 29, 29, 35

Sum=16+18+19+21+23+23+27+29+29+35 =240
N=10
Mean=Sum/N=240/10 =24

(c) 2.2, 10.2, 14.7, 5.9, 4.9, 11.1, 10.5

Sum=2.2+10.2+14.7+5.9+4.9+11.1+10.5 =59.5
N=7
Mean=Sum/N=59.5/7 =8.5

2. The mean of 8, 11, 6, 14, x and 13 is 66. Find the value of the observation x.

Sum=8+11+6+14+x+13 =52+x
N=6
Given, Mean=66

- ⇨ **Sum/N=66**
- ⇨ **52+x/6=66**
- ⇨ **52+x=396**
- ⇨ **x=344**

3. Find the mean of the following distribution.

(a) The age of 20 boys in a locality is given below.

Age in Years	12	10	15	14	8
Number of Boys	5	3	2	6	4

X=Age in Years, f=Number of boys
Xf=60, 30, 30, 84, 32, N=5+3+2+6+4 =20
∑Xf=60+30+30+84+32 =236
Mean=∑Xf/N =236/20 =11.8

(b) Marks obtained by 40 students in an exam are given below.

Marks	25	30	15	20	24
Number of Students	8	12	10	6	4

X=Marks, f=Number of Students
Xf=200, 360, 150, 120, 96, N=8+12+10+6+4 =40
∑Xf=200+360+150+120+96 =926
Mean=∑Xf/N =926/40 =23.15

(c)

x_i	1	2	3	4	5
f_i	4	5	8	10	3

X=x_i, f=f_i
Xf=4, 10, 24, 40, 15, N=4+5+8+10+3 =30
∑Xf=4+10+24+40+15 =93
Mean=∑Xf/N =93/30 =3.1

(d) The daily wages of 50 employees in an organization are given below:

Daily wages (in $)	100 - 150	150 - 200	200 - 250	250 - 300
Number of Workers	12	13	17	8

Find the mean daily wages.

x=Daily wages (in $), f=Number of Workers
X=Average of each interval=125,175,225,275
Xf=1500,2275,3825,2200
N=12+13+17+8 =50
∑Xf=1500+2275+3825+2200 =9850
Mean Daily Wages=∑Xf/N =9850/50 =$197

4. Find the mode of the following data.

(a) 12, 8, 4, 8, 1, 8, 9, 11, 9, 10, 12, 8

Solution: - Mode =8

(b) 15, 22, 17, 19, 22, 17, 29, 24, 17, 15

Solution: - Mode =17

(c) 0, 3, 2, 1, 3, 5, 4, 3, 42, 1, 2, 0

Solution: - Mode =3

(d) 1, 7, 2, 4, 5, 9, 8, 3

Solution: - No Mode

5. The runs scored in a cricket match by 11 players is as follows:

7, 16, 121, 51, 101, 81, 1, 16, 9, 11, 16

Find the mean, mode, median of this data.

Sum=7+16+121+51+101+81+1+16+9+11+16 =430
N=11

Mean=Sum/N=/11 =430/11 =39.0909

Mode =16
Arranging numbers for Median =1, 7, 9, 11, 16, 16, 16, 51, 81, 101, 121
N=11+1/2 =6th position

Median =16

6. The weights in kg of 10 students are given below:

39, 43, 36, 38, 46, 51, 33, 44, 44, 43

Find the mode of this data. Is there more than 1 mode? If yes, why?

Mode =43, 44.

Mode is the number that occur most frequent number of times in the series of data. There can be no mode, one mode or more than one mode in a series of data. Here, 43 and 44 occur same number of times in the series i.e. 2 times. Hence, both 43 and 44 is the mode of the given data.

7. The marks obtained by 40 students out of 50 in a class are given below in the table.

Marks (in $)	42	36	30	45	50
Number of Students	7	10	13	8	2

Find the mode of the above data.

Solution: - Mode =30 as frequency is more than other marks obtained.

8. The number of rupee notes of different denominations are given below in the table.

Denominations (Rs)	10	20	5	50	100
Number of Notes	40	30	10	25	20

Find the mode of the above data.

Solution: - Mode =10 as frequency is more than other denominations.

9. Find the median of the following data.

(a) 27, 39, 49, 20, 21, 28, 38

Arranging numbers for Median =20, 21, 27, 28, 38, 39, 49
N=7+1/2 =4th position

Median =28

(b) 10, 19, 54, 80, 15, 16

Arranging numbers for Median =10, 15, 16, 19, 54, 80
N=6+1/2 =3.5 =3rd & 4th position
Average of 16 and 19 =35/2 =17.5

Median =17.5

(c) 47, 41, 52, 43, 56, 35, 49, 55, 42

Arranging numbers for Median =35, 41, 42, 43, 47, 49, 52, 55, 56
N=9+1/2 =5th position

Median =47

(d) 12, 17, 3, 14, 5, 8, 7, 15

Arranging numbers for Median =3, 5, 7, 8, 12, 14, 15, 17
N=8+1/2 =4.5 =4th & 5th position
Average of 8 and 12 =20/2 =10

Median =10

10. The following observations are arranged in ascending order. The median of the data is 25 find the value of x.

17, x, 24, x + 7, 35, 36, 46

N=7+1/2=4th position

Median is in 4th position.

So, Median=x+7=25

- ⇨ **x=25-7**
- ⇨ **x=18**

11. The mean of the following distribution is 26. Find the value of p and also the value of the observation. Also, find the mode and the given data.

x_i	0	1	2	3	4	5
f_i	3	3	p	7	p - 1	4

$X=x_i$, $f=f_i$

Given, Mean =26

- ⇨ **2p+16/6 =26**
- ⇨ **2p+16 =156**
- ⇨ **2p =140**
- ⇨ **p =70**

Observation for 2, f=70 & Observation for 4, f=69

Mode =2 as frequency is 70 for x=2