Statistics/सांख्यिकी

LIVE

- Range/परिसर
- Mode/बहुलक

By Pushpendra Sir

1. **What is mean of 9, 14, 0, 1, 0, 6, 10, 20, 0?**
9, 14, 0, 1, 0, 6, 10, 20, 0 का माध्य बताओ?

(A) 2.22
(B) 8.88
(C) 6.66
(D) None

2. Find mean for the data
2, 4, 5, 5, 1, 1, 1, 7, 8, 12 (माध्य बताओ)?

(A) 4.6 **(B) 4**
(C) 5.6 **(D) 4**

3. Find Mean (माध्य) of 12.4, 10.3, 8.2, 9.5, 11.4

(A) 10.21
(B) 10.72
(C) 10.36
(D) 12

4. Find out Mean of 151 whole No (पूर्ण संख्याओं)?

SSC MTS : 2019

(A) 65
(B) 75
(C) 70
(D) None

5. Find Mean of first 20 odd (विषम) Natural No.

(A) 10
(B) 20
(C) 15
(D) 18

6. Find Arithmetic mean of following :-

निम्नलिखित का समान्तर माध्य बताओ?

$x, x + 1, x + 2, x + 3, x + 4, x + 5, x + 6$

(A) $x + 3$ (B) $x + 4$

(C) $2x + 4$ (D) None

7. **Given that the mean of five numbers is 28. If one is excluded, the mean gets reduced by 5. Determine the excluded number?**

पाँच संख्याओ का माध्य 28 है। यदि एक को बाहर रखा जाता है तो माध्य 5 से घट जाता है। बाहर रखी गई संख्या बताओ?

SSC CHSL 15/10/2020

(A) 46
(B) 48
(C) 47
(D) 45

8. Find mean (माध्य) of the following distribution.

x	5	6	7	8	9
f	4	8	14	11	3

(A) 8.325
(B) 9.125
(C) 7.025
(D) 5.225

9. If the mean of the following distribution is 26, then what is the value of k?

यदि निम्नलिखित बटन का माध्य 26 है तो k का मान क्या है।

Class 0-10	10-20	20-30	30-40	40-50
Frequency 8	10	k	6	12

(A) 8
(B) 1
(C) 4
(D) 10

10. The temperature of (°C) of 11 days recorded as follows:-

29 32 30 15 21 24 23 27 26 30 33

The median (माध्यिका) of the temperature is.

(A) 26 (B) 27

(C) 23 (D) 18

11. What is median of given data. (माध्यिका)

41, 43, 46, 50, 85, 61, 76, 55, 68, 95

SSC MTS : 2019

(A) 61
(B) 58
(C) 57
(D) 55

12. The median (माध्यिका) of the given data?

$\frac{1}{2}, \frac{2}{7}, \frac{3}{4}, \frac{1}{3}, \frac{5}{8}$

(A) 3/4
(B) 2/7
(C) 1/3
(D) 1/2

13. The marks of nine students in ascending order for a test are given below with median as 34, the value of k.

एक परीक्षा में नौ छात्रों के द्वारा प्राप्त किये गए अंक आरोही क्रम में दिये गये है। तथा माध्यिका **34** है तो **k** का मान बताओ?

12, 16, k, 28, k + 5, 32, 39, 47, 53

SSC MTS : 2019

(A) 29
(B) 27
(C) 30
(D) 32

14. The data below shows the number of batsman having different batting averages.

Average	No of bats man
40-44	12
44-48	10
48-52	8
52-56	6
56-60	4

What is the mean batting average per batsman?

(A) 48
(B) 47
(C) 46
(D) 45

15.

Class	40-50	50-60	60-70	70-80
Frequency	4	3	1	2

What is the mean (माध्य) of the distribution

CDS : 2023

(A) 51
(B) 52
(C) 54
(D) 56

16. Let x be the median of data 33, 42, 28, 49, 32, 37, 52, 57, 35, 41. If 32 is replaced by 36 and 41 by 63. Then the median of data, So obtained is y. What is the value of x + y?

(A) 78.5
(B) 79.5
(C) 79
(D) 78

Range/परिसर

LIVE

By Pushpendra Sir

1. **The following are the weights (in kg) of 25 students**

58, 55, 53, 50, 53, 51, 52, 54, 53, 52, 54, 53, 58, 53, 59, 55, 53, 52, 51, 54, 53, 59, 55, 53, 52

What is the range (परिसर) **of given data?**

(A) 8
(B) 10
(C) 9
(D) 12

2. The mean (माध्य) of three numbers is 32. The range (परिसर) of this data is 28. While the difference between the two smallest numbers is 8. Find greatest of the three number is?

(A) 48
(B) 50
(C) 51
(D) 52

Mode/बहुलक

LIVE

By Pushpendra Sir

1. What is the mode of the given data?

दिये गये आकड़ो का बहुलक कितना है?

4, 3, 4, 3, 2, 2, 2, 5, 5, 3, 4, 6, 4, 3, 3

SSC : 2022

(A) 4
(B) 3
(C) 2
(D) 5

2. What is the mode (बहुलक) of given data

4, 2, 3, 2, 7, 4, 8, 5, 2, 4, 5, 6, 2, 5, 6, 6, 5, 4, 6, 5, 3, 5, 4, 3 ?

(A) 2
(B) 5
(C) 6
(D) 4

3. The weight of 20 students has been shown in the table given below.

Weight (in kg)	Number of students
48	6
51	3
60	2
53	4
56	5

What are the mode (बहुलक) and the median of the data given above respectively?

(A) 48 & 53
(B) 50 & 52
(C) 51 & 54
(D) None

4. **The numbers 8, 9, 11, 15, 17, 21 and N are arranged in ascending order. The mean of these numbers is equal to the median of the numbers. The value of N is?**

संख्याओं **8, 9, 11, 15, 17, 21** और **N** को आरोही क्रम में व्यवस्थित किया गया है। इन संख्याओं का माध्य संख्याओं की माध्यिका के बराबर होता है। **N** का मान है?

(A) 24 **(B) 26**

(C) 25 **(D) 22**

5. What is the mean of the median and the mode of the data?

दिए गए डेटा के बहुलक और माध्यिका का माध्य क्या है?

19, 20, 14, 15, 19, 16, 17, 15, 14, 13, 18, 19, 17, 13

(A) 17
(B) 18
(C) 17.75
(D) 17.25

6. What is the mean of the range and median of the given data?

दिए गए आँकड़ों के परास और माध्यिका का माध्य क्या है?

11, 16, 14, 7, 11, 23, 10, 30, 20, 33, 19, 12, 17, 14

(A) 20.5
(B) 25.5
(C) 24
(D) 19

7. **The values of the mode and median are 7.52 and 9.06, respectively, in an moderately asymmetrical distribution. The mean of the distribution is?**

सामान्य असमित वितरण में बहुलक और माध्यिका का मान क्रमशः 7.52 और 9.06 है, तो वितरण का माध्य क्या होगा?

(A) 9.83
(B) 8.67
(C) 10.23
(D) 9.5

8. What is the mean deviation of eight observations?

आठ प्रेक्षणों का माध्य विचलन क्या है?

6, 7, 10, 12, 13, 4, 8, 12

(A) 2.75
(B) 2.25
(C) 2
(D) 2.5

9. **In a frequency distribution, the mid value of a class is 12 and its width is 6. The lower limit of the class is :**

एक बारम्बारता बंटन में, एक वर्ग का मध्य मान 12 और उसकी चौड़ाई 6 है। वर्ग की निचली सीमा है?

(A) 12
(B) 9
(C) 6
(D) 18

10. What is the mean deviation of eight observations ?

आठ प्रेक्षणों का माध्य विचलन क्या है?

6, 7, 10, 12, 13, 4, 8, 12

(A) 7.75
(B) 2.25
(C) 2
(D) 2.5

1. **Mean deviation** (माध्य विचलन) = $\frac{\sum_{i=1}^{x} \left(x;-\frac{1}{x}\right)}{x}$

2. **Varriance** (विचरण) = $\frac{\sum_{i=1}^{x} (x;-\bar{x})^2}{x}$

3. **Standard deviation** = $\sqrt{Varriance}$
(मानक विचलन)

4. **Coefficient of varriation** = $\frac{S.D}{Mean} \times 100$
(विचरण गुणांक)

11. Find the variance of the following data?

निम्न डेटा बिंदुओ का विचरण ज्ञात करो ?

6, 7, 5, 9, 12, 15

(A) 67/7
(B) 37/3
(C) 81/3
(D) 37/6

12. Calculate the Standard deviation for the following data.

निम्नलिखित डेटा के लिए मानक विचलन की गणना करे।

4, 7, 9, 10, 15

(A) 2.733 **(B) 3.133**

(C) 3.533 **(D) 3.633**

13. 6, 7, 10, 12, 13, 8, 14 find varriance (विचरण)

(A) 9.25
(B) 8.50
(C) 8.29
(D) 9

1. The median of the distribution given below is 14.4. Find the values of x and y, if the total frequency is 20.

Class interval	0-6	6-12	12-18	18-24	24-30
Frequency	4	x	5	y	1

(A) 4.6
(B) 6.4
(C) 2.5
(D) 5.2

2. The following is the cumulative frequency distribution (of less than type) of 1000 persons each of age 20 years and above. Determine the mean age.

Age below (in years)	30	40	50	60	70	80
Number of persons	100	220	350	750	950	1000

(A) 61.3
(B) 51.3
(C) 52.4
(D) None

3. The monthly income of 100 families are given as below :

Income (in Rs)	Number of families
0-5000	8
5000-10000	26
10000-15000	41
15000-20000	16
20000-25000	3
25000-30000	3
30000-35000	2
35000-40000	1

Calculate the modal income.

4. Weekly income of 600 families is tabulated below :

Weekly income (in Rs)	Number of families
0-1000	250
1000-2000	190
2000-3000	100
3000-4000	40
4000-5000	15
5000-6000	5
Total	600

(a) 1263.15
(b) 1260.20
(c) 1270.15
(d) None

Compute the median income.

5. Find the unknown entries a, b, c, d, e, f in the following distribution of heights of students in a class :

Height (in cm)	Frequency	Cumulative frequency
150-155	12	a
155-160	b	25
160-165	10	c
165-170	d	43
170-175	e	48
175-180	2	f
Total	50	

6. The frequency distribution table of agricultural holdings in a village is given below :

Area of land (in hectares)	1-3	3-5	5-7	7-9	9-11	11-13
Number of families	20	45	80	55	40	12

Find the modal agricultural holdings of the village.

(A) 6.2 (B) 7

(C) 8.5 (D) None

7. The percentage of marks obtained by 100 students in an examination are given below :

Marks	30-35	35-40	40-45	45-50	50-55	55-60	60-65
Frequency	14	16	18	23	18	8	3

Determine the median percentage of marks.

(A) 45.4
(B) 43.2
(C) 44.6
(D) None

8. Daily wages of 110 workers, obtained in a survey, are tabulated below :

Daily wages (in Rs)	Number of workers
100-120	10
120-140	15
140-160	20
160-180	22
180-200	18
200-220	12
220-240	13

Compute the mean daily wages of these workers.

(a) 170.20
(b) 180.40
(c) 160.20
(d) None

1. **Mean deviation** (माध्य विचलन) = $\frac{\sum_{i=1}^{n}(x-\bar{x})}{n}$

2. **Varriance** (विचरण) = $\sum_{i=1}^{n} \frac{(x-\bar{x})^2}{n}$

3. **Standred deviation** (मानक विचरण) = $\sqrt{\text{Variance}}$

4. **Coefficient of varriation** (विचरण गुणांक) = $\frac{\text{S.D}}{\text{Mean}} \times 100$

जब data class interval की form में हो

$$\textbf{Meadian} = \frac{\left(\frac{n}{2} - cf\right)}{f} \times h$$

Mode of Grouped Data

- In grouped frequency distribution, it is not possible to determine the mode by looking at the frequencies. To find the mode of orovped data, locate the class with maximum frequency. This class is known as modal class.
- Mode $= l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right) \times h$
- l is lower limit of modal class
  h is size of class
  f_1 is frequency of modal class
  f_0 & f_2 are the frequencies of the classes proceding and succeeding the modal class.

Median of Grouped Data

- Cumulative frequency table – The less than type and more than type of grouped frequency distribution.
- If n is the total number of observations, locate the class whose cumulative frequency is greater than (and hear to) n/2. This is called the median class
- $$\text{Median} = l + \left(\frac{\frac{n}{2} - cf}{f}\right) h$$