

# Statistics (Mean Median Mode)

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Last update: 24/12/2024 19:47

1) If the mean of 6, 7,  $x$ , 8,  $y$ , 14 is 9, then which of the following is true?

(a)  $x + y = 21$ , (b)  $x + y = 19$ , (c)  $x - y = 21$ , (d)  $x - y = 19$

Ans:

2) If the mean of  $n$  numbers be  $\bar{x}$  and sum of first  $(n - 1)$  numbers is  $k$ , then  $n$ -th term is -

(a)  $\bar{x} + k$ , (b)  $n\bar{x} + k$ , (c)  $\bar{x} - k$ , (d)  $n\bar{x} - k$

Ans:

3) If  $x_1 = 5$ ,  $x_2 = -3$ ,  $y_1 = 2$ ,  $y_2 = -5$ , then find the value of  $\sum_{i=1}^2 x_i y_i$  -

(a) 25, (b) 10, (c) 0, (d)  $-3$

Ans:

4) If  $\sum_{i=1}^{20} (x_i - 4) = 10$ , then the value of  $\bar{x}$  is -

(a) 4, (b)  $\frac{9}{2}$ , (c) 5, (d)  $\frac{11}{2}$

Ans:

5) Median of the data 8, 15, 10, 11, 7, 9, 11, 13, 16 is -

(a) 15, (b) 10, (c) 11.5, (d) 11

Ans:

6) If the mean of the data  $x + 1$ ,  $x + 2$ ,  $x + 3$ ,  $x + 4$  is 0.5, then its median is -

(a) 0.5, (b) 1, (c) 1.5, (d) 2

Ans: (a) 0.5

7) If the mode of the data 16, 15, 17, 16, 15,  $x$ , 19, 17, 14 is 15, then the value of  $x$  is -

(a) 15, (b) 16, (c) 17, (d) 19

Ans:

8) If the mean of a set of observation  $x_1, x_2, x_3, \dots, x_{10}$  is 20, then the mean of

$x_1 + 4, x_2 + 4, x_3 + 4, \dots, x_{10} + 4$  is .....

Ans: 24

9) If the mean of a set of observation  $x_1, x_2, x_3, \dots, x_n$  is  $\bar{x}$ , then the mean of

$ax_1, ax_2, ax_3, \dots, ax_n$  is ..... (where  $a \neq 0$ )

Ans:  $a\bar{x}$

10) If the mean of  $p$  numbers is  $b$  and mean of  $(p + q)$  numbers is  $a$ , the mean of  $q$  numbers is .....

Ans:  $\frac{(p + q)a - pb}{q}$

11) The median of a given frequency distribution is found graphically with the help of .....

Ans: Ogive

12) The abscissa of the point of intersection of less than type and of the more than types cumulative frequency curves of a grouped data gives its ..... (mean / median / mode)

Ans: Median (মধ্যমা)

13) The median of the data 6, 10, 5, 4, 9, 11, 20, 18 is .....

Ans:

14) If the data  $x_1, x_2, x_3, \dots, x_{100}$  are arranged in ascending order, then the median is .....

Ans:

15) Mean, median and mode are the measure of .....

Ans:

16) The sum of median and mode of the data 12, 19, 11, 13, 18, 11, 13, 12, 13 is .....

Ans:

17) The mode of the data 2, 3, 5, 6, 2, 4, 2, 8, 9, 4, 5, 4, 7, 4, 4 is .....

Ans:

18) Mode of the data 9, 12, 15, 18, 21 is .....

Ans: Does exist (অস্তিত্ব নেই)

19) State true or false.

(i) For all data,  $\sum_{i=1}^n (x_i - \bar{x}) = 0$ .

(ii) Mean and median of the following data are equal: 5, 3, 9, 6, 7.

(iii) If  $n$  is an odd number, then  $\frac{n + 1}{2}$ -th term is the median.

(iv) If  $n$  is an even number, then average of  $\frac{n}{2}$  th and  $\left(\frac{n}{2} - 1\right)$  th observation is the median of that data.

(v) Median of the data 2, 3, 9, 10, 9, 3, 9 is 10.

(vi) The median is always one of the numbers in a data.

(vii) An ogive is always a straight line graph.

(viii) Mode of the data 2, 3, 3, 2, 5, 2, 3, 6, 5 is 6.

(ix) There can be multiple modes for a given data set.

(x) There can be no mode for a given data set.

Ans:

20) The frequency of three numbers 12, 15 and 20 are  $x + 2$ ,  $x$  and  $x - 1$  respectively. If the mean of this data is 14.5, find  $x$ .

Ans: 3

21) If  $\sum_{i=1}^5 x_i = 4$  and  $\sum_{i=1}^5 x_i^2 = 12$ , then find the value of  $\sum_{i=1}^5 2x_i(x_i - 3)$ .

Ans: 0

22) If  $u_i = \frac{x_i - 10}{5}$ ,  $\sum f_i u_i = 30$  and  $\sum f_i = 50$ , then find the value of  $\bar{x}$ .

Ans: 13

23) If the mean of a frequency distribution is 8.1,  $\sum f_i x_i = 132 + 5k$ ,  $\sum f_i = 20$ , then find the value of  $k$ .

Ans: 6

24) The numbers 6, 8, 10, 12, 13 and  $x$  are arranged in an ascending order. If the mean of the observations is equal to the median, find the value of  $x$ .

Ans: 17

25) If the numbers 11, 12, 14,  $x - 2$ ,  $x + 4$ ,  $x + 9$ , 32, 38, 47 are arranged in ascending order and their median is 24, what is the value of  $x$ ?

Ans: 20

26) If the mode of the data  $p + 1$ ,  $p + 2$ ,  $p - 3$ ,  $p + 4$ ,  $p + 2$  is 15, find the value of  $p$ .

Ans: 13

27) If the mean and median of a frequency distribution table are 32.5 and 30 respectively, then find the mode of this distribution.

Ans: 30

28) If the mean of the following data is 8, then find the value of  $p$ .

$x_i$	$f_i$
3	6
5	8
8	5
9	$p$
11	8
13	14

Ans: 10

29) Find the mean for the following frequency distribution table.

Class	Frequency
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25 – 29	10
30 – 34	12
35 – 39	15
40 – 44	5
45 – 49	3
50 – 54	5

Ans: 36.4

30) If the mean of scores in the following frequency distribution is 24, then compute the missing frequency  $p$ .

Class (scores)	No. of students
0 – 10	15
10 – 20	20
20 – 30	35
30 – 40	$p$
40 – 50	10

Ans: 20

31) The daily expenditure of 100 students are given below. Calculate  $f_3$  and  $f_4$  if the mean daily expenditure is ₹88.

Expenditure (in ₹)	No. of students
40 – 60	5
60 – 80	25
80 – 100	$f_3$
100 – 120	$f_4$
120 – 140	5

Ans:  $f_3 = 50, f_4 = 15$

32) If the mean of the following frequency distribution is 62.8 and the sum of all the frequencies is 50, then compute the missing frequency  $x$  and  $y$ .

Class	Frequency
0 – 20	5
20 – 40	$x + y$
40 – 60	10
60 – 80	$y - x$
80 – 100	7
100 – 120	8

Ans:  $x = -2, y = 10$

33) Find the median of the following frequency distribution.

Class	Frequency
1 – 5	2
6 – 10	3
11 – 15	6
16 – 20	7
21 – 25	5
26 – 30	4
31 – 35	3

Ans: 18.36 (approx)

34) Find the median of the following frequency distribution.

Class	Frequency
51 – 60	4
61 – 70	10
71 – 80	15
81 – 90	20
91 – 100	15
101 – 110	4

Ans: 83

35) Find the mean for the following frequency distribution table.

Scores	No. of students
less than 10	8
less than 20	15
less than 30	29
less than 40	42
less than 50	60
less than 60	70

Ans: 34.61

36) If the median of the given data is 32, then find the value of  $x$  and  $y$  when total frequency is 100.

Class limit	Frequency
0 – 10	10
10 – 20	$x$
20 – 30	25
30 – 40	30
40 – 50	$y$
50 – 60	10

Ans:  $x = 9, y = 16$

37) If the median of the given data is 28.5 , then find the value of  $x$  and  $y$  when total frequency is 60

শ্রেণি	পরিসংখ্যা
0 – 10	5
10 – 20	$x$
20 – 30	20
30 – 40	15
40 – 50	$y$
50 – 60	5

Ans:  $x = 8, y = 7$

38) Find the median for the given data by drawing the two types of ogives.

Class	Frequency
0 – 10	7
10 – 20	10
20 – 30	23
30 – 40	50
40 – 50	6
50 – 60	4

Ans: 32

39) The table given below shows the frequency distribution of the scores obtained by 200 candidates in an entrance examination. Find the median of the given data by drawing ogive.

Score	No. of students
400 – 450	20
450 – 500	30
500 – 550	28
550 – 600	26
600 – 650	24
650 – 700	22
700 – 750	18
750 – 800	32

Ans: 580

40) Find the mode for the following frequency distribution table.

Class	Frequency
45 – 54	8
55 – 64	13
65 – 74	19
75 – 84	32
85 – 94	12

95 – 104	6
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Ans: 78.44 (approx)

41) If the mode of the following frequency distribution table is 24, then find the value of  $x$ .

Class	Frequency
0 – 10	3
10 – 20	5
20 – 30	9
30 – 40	$x$
40 – 50	2

Ans: 3

42) Find the mode for the following frequency distribution table.

Class	Cumulative Frequency
less than 10	4
less than 20	16
less than 30	40
less than 40	70
less than 50	96
less than 60	112
less than 70	120
less than 80	125

Ans: 34.29 (approx)