SUB: Mathematics **CLASS: IX**

TOPIC: STATISTICS

1. Construct a grouped frequency table with class intervals 0 – 5, 5 – 10 and so on for the following Marks obtained in math's (out of 50) by a group of students in an examination:
   0, 5, 6, 7, 10, 12, 14, 15, 20, 22, 25, 26, 27, 8, 11, 17, 3, 6, 9, 17, 19, 21, 22, 29, 31, 35, 37, 40, 42, 45, 49, 4, 50, 16, and 20
   i) What is the range of the data? ii) which group contains the maximum number of students
   iii) Determine the class size iv) Construct a cumulative frequency table
2. The mean of 96, 98, x, 102, 104 is 100, find x (100)
3. Find the mean of the following distribution: (55)

x	10	30	50	70	89
f	7	8	10	15	10

4. Find the mean of x, x + 2, x + 4, x + 6 and x + 8 (x + 4)
5. Find the mean of prime numbers between 20 and 30 (26)
6. Find the median of the following data: 41, 43, 127, 99, 61, 92, 71, 58, and 57. If 58 is replaced 85, what will be the new median. (61, 71)
7. Find the median of first ten multiples of 5 (27.5)
8. The following observations have been arranged in ascending order. If the median of the data is 63 find the value of x.
   29, 32, 48, 50, x, x+2, 72, 78, 84, 95 (62)
9. Find the class mark of class 150 - 160 (155)
10. The marks obtained by students in unit test of mathematics are given below .Represent the Data by histogram.

Marks	0 – 10	10 – 30	30 – 45	45 – 50
Number of students	8	32	18	10

11. The mean of 5 numbers is 18. If one number is excluded, then mean is 16. Find the excluded Number (26)
12. The mean of 10 numbers is 20. If 5 is subtracted from every number what will be the new mean (15)
13. If the mean of 10 observations is 20 and that of another 15 observation is 16. Find the mean of all the 25 observation. (17.6)
14. Determine the median of 24, 23, a, a-1, 12, 16, where a is the mean of 10, 20, 30, 40, 50. (23.5)
15. If the mean of 5 observations x, x+2, x+4, x+6, x+8 is 11. Find the mean of first 3 observations
16. If mean = 20.2, find p (p = 20)

x	10	15	20	25	30
f	6	8	p	10	6

17. Draw a histogram and a frequency polygon from the following data

Class	21 – 25	26 – 30	31 – 35	36 – 40	41 – 45	46 – 50	51 – 55	56 – 60
Frequency	21	22	50	110	87	51	18	23

18. Draw a frequency polygon for the following data

Class	25 – 35	35 – 45	45 – 55	55 – 65	65 – 75	75 – 85
Frequency	5	10	15	20	12	8

19. The mean of first 8 observations is 18 and last 8 observations is 20. If the mean of all 15 observations is 19, find the 8^{th} observation
20. The mean of 5 observations was calculated as 145, but it was later on deducted that one observation was misread as 45 in place of 25. Find the correct mean of the observations (141)
21. The class marks of a distribution are given below:
    8, 14, 20, 26, 32, 38, 44, 50. Find the class size and class interval

22) Class mark of class interval 60 – 70 is

a) 60 b) 70 c) 65 d) 75

23) The upper class limit of class interval 35 – 45 is equal to

a) 35 b) 40 c) 45 d) 10

24) If the mean of the data 6, 8, 10, 3, 7 and m is 7 then the value of m is

a) 10 b) 12 c) 8 d) 9

25) The mean of first five even natural numbers is

a) 10 b) 15 c) 30 d) 6

26) The mode of the data 4, 4, 8, 10, 15, 20 8, 17 and x is 4, then the value of x is

a) 4 b)8 c) 20 d) 15

27) The mean of first five whole numbers is

a) 2 b) 3 c) 3.5 d) 2.5

28) Histogram is prepared in which series.

a) Individual b) Discrete c) Continuous d) None of these

29) The range of the data:

25, 18, 20, 22, 16, 6, 17, 15, 12, 30, 32, 10, 19, 8, 11, 20 is

a)10 b) 15 c) 18 d) 26

30) The median of the first five composite numbers .....

a) 5 b) 8 c) 7.4 d) none of these

Class : IX Subject : Mathematics Assignment 12 : Statistics

1. Write the class size in each of the following:
   (a) 0 – 4, 5 – 9, 10 – 14 (b) 10 – 19, 20 – 29, 30 – 39 (c) 5 – 5.01, 5.01 – 5.02, 5.02 – 5.03
2. Write class size and class limits in each of the following if the class marks are:
   (a) 104, 114, 124, 134, 144, 154 (b) 47, 52, 57, 62, 67, 72, 77 (c) 12.5, 17.5, 22.5, 27.5, 32.5, 37.5
3. The monthly wages of 30 workers in a factory are given below:-
   830, 835, 890, 810, 835, 836, 869, 894, 898, 890, 820, 860, 832, 833, 855,
   845, 804, 808, 812, 840, 885, 835, 836, 878, 840, 868, 890, 806, 840, 890
   (a) Form frequency distribution table with class size 10
   (b) Find cumulative frequency
   (c) Draw histogram and frequency polygon
4. Draw histogram and frequency polygon:

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70
No. of students	5	10	4	6	7	3	2

5. The following are the scores of two groups of class IX students in a test.

Scores	Group A	Group B
50 – 52	4	2
47 – 49	10	3
44 – 46	15	4
41 – 43	18	8
38 – 40	20	12
35 – 37	12	17
32 - 34	13	22
Total	92	68

6. The mean of 40 observations was 160. It was detected on rechecking that the value of 165 was wrongly copied as 125 for computation of mean. Find the correct mean.
7. The mean monthly salary of 10 members of a group is Rs 1445, one more member whose monthly salary is Rs 1500 has joined the group. Find the mean monthly salary of 11 members.
8. If the mean of the following distribution is 6, find the value of P.

X	2	4	6	8	P + 5
F	3	2	3	1	2

9. Draw histogram of the weekly pocket expenses of 125 students of a school given below:

Weekly expenses (Rs)	No of students
10 – 20	10
20 – 30	15
30 – 50	40
50 – 60	25
60 – 90	30
90 - 100	5

10. Draw a histogram of the following distribution table:

Marks obtained	No of students
0 – 10	4
10 – 20	8
20 – 40	20
40 – 45	10
45 – 60	12
60 – 70	6
70 - 80	10
Total	70

11. The median of the following observations arranged in ascending order, is 25. find x.

11, 13, 15, 19, x + 2, x + 4, 30, 35, 39, 46

12.The mean of 1, 7, 5, 3, 4 and 4 is m. the numbers 3, 2, 4, 2, 3, 3, and p have mean m – 1 and median q. find p and q.

13. In the following groups of data, tell whether the mean or the median best describes the data:

(i) 6, 4, 2, 12, 2 (ii) 31, 28, 24, 9, 23 (iii) 45, 51, 47, 65, 36 (iv) 10, 20, 30, 100, 9

14. Find the median of the first 10 natural numbers. Is it equal to their mean?

15. The following data has been arranged in ascending order:

24, 27, 28, 31, 34, x, 37, 40, 42, 45.

16. If the median of the data is 35, find x. in the above data, if 45 is changed to 33, find the new median.

17. For what value of x, the mode of the following data is 5?

2, 4, 3, 5, 4, 5, 6, 4, x, 7, 5

18. A boy scored the following marks in various class tests during a term, each test being marked out of 20:

16, 10, 7, 17, 9, 16, 14, 19, 20, 18, 12

Find the mean, median and modal marks. Verify if the following relation holds true: Mean – Mode = 3 (Mean – Median)