

Statistics Formative assessment

Fill in the blank

- (a) The mean of the data set (4 , 10 , 7 , 7 , 6 , 9 , 3 , 8 , 9) is (7/8/9)
- (b) The median of the above data set is (7/8/9)
- (c) There are Modes of the above given data set (1/2/3)
- (d) The range of the data set (78 , 65 , 68 , 72 , 70 , 76 , 74 , 62 , 80 , 82 , 96 , 101) is (56/39/40)
- (e) The mean of five numbers is 40. If one number is excluded, their mean becomes 28. The excluded number is..... (68/88)
- (f) The class size of the grouped size frequency table given below is

5-5.2	5.2-5.4	5.4-5.6	5.6-5.8	5.8-6.0
34	4	4	4	6

..... (.1/.2)

Solution

- (a) 7. Mean= $(4+10+7+7+6+9+3 +8 +9)/9=7$
- (b) 7 . Arranging the data in ascending order 3, 4, 6, 7, 7, 8, 9, 9, 10
- (c) 2. Two 7 and two 9
- (d) 39. Higher limit is 101 and lower limit is 62. So range $101-62=39$
- (e) 88
- Sum of five number= $5 \times \text{mean}=200$
- Sum of four number= $4 \times \text{mean}=112$
- Subtracting, we get the number=88
- (f) Class size is .2

True or False statement

Question 2

Two sections of Class XII having 30 students each appeared for Science Olympiad. The marks obtained by them are shown below:

46 31 74 68 42 54 14 61 83 48 37 26 8 64 57
 93 72 53 59 38 16 88 75 56 46 66 45 61 54 27
 27 44 63 58 43 81 64 67 36 49 50 76 38 47 55
 77 62 53 40 71 60 58 45 42 34 46 40 59 42 29

Student having Marks above 80 are exceptional
 Student obtaining below 30 marks are failed

- (a) The no of student who scored more than 89 marks is 2
- (b) The number who scored, marks between 50-69 is 22
- (c) The number of student who scored more than 49 marks is 32
- (d) The range of the marks is 85
- (e) The no of exceptional students are 4
- (f) Student who failed in the test are 7

Solution

First we need to draw the grouped frequency distribution of the data to easily solve the data

Class	Frequency
0-9	1
10-19	2
20-29	4
30-39	6
40-49	15
50-59	12
60-69	10
70-79	6
80-89	3
90-99	1

- (a) False. Its value is 1
- (b) True
- (c) True.
- (d) True. Lowest value is 8 and highest is 93
- (e) True.
- (f) True

Multiple choice Questions

Question 3

Find x and y so that the ordered data set has a mean of 42 and a median of 35.

17, 22, 26, 29, 34, x, 42, 67, 70, y

- (a) X=34, y=77
- (b) X=36, y=77
- (c) X=77, y=34
- (d) X=77, y=36

Solution (b)

Question 4

For what value of n , the mode of the following data is 18?

2, 5, 3, 18, 5, 18, 6, 5, n , 7, 18

- (a) 18
- (b) 5
- (c) It can be any value
- (d) None of these

Solution (a)

There are three 5 and three 18.
For mode to be 18, $n=18$

Question 5

For drawing a frequency polygon of a continuous frequency distribution, we plot the Points whose ordinates are the frequencies of the respective classes and abscissae are respectively:

- (a) Class marks of the classes
- (b) Upper limits of preceding classes
- (c) Lower limits of the classes
- (d) Upper limits of the classes

Solution (a)**Question 6**

There are 150 numbers. Each number is subtracted from 60 and the mean of the numbers so obtained is found to be -4.5 . The mean of the given numbers is

- a) 400
- b) 34.5
- c) 64.5
- d) 55.5

Solution (d)

Mean of number $-60 = -4.5$
So mean of number is 55.5

Question 7

The median and mean of the first 10 natural numbers are,

- a) 5.5, 5.5
- b) 5.5, 6
- c) 5, 6
- d) None of these

Solution (a)

Mean = 5.5

Median is mean of 5 and 6 th term, So 5

Question 8

Anand says that the median of 3, 14, 19, 20, 11 is 19. What doesn't the Anand understand about finding the median?

- a) The dataset should be ascending order
- b) Highest no in the dataset is the median
- c) Average of lowest and highest is the median
- d) None of these

Solution (a)

Question 9

The following observations are arranged in ascending order :

20, 23, 42, 53, x, x + 2, 70, 75, 82, 96

If the median is 63, find the value of x.

- a) 62
- b) 64
- c) 60
- d) None of these

Solution (a)

Median is mean of 5 and 6 term

So $x+1=63$

$X=62$

Question 10

The mean of 20 observations was 60. It was detected on rechecking that the value of 125 was wrongly copied as 25 for computation of mean. Find the correct mean

- a) 67
- b) 66
- c) 65
- d) None of the above

Solution

Let x be the sum of observation of 19 numbers leaving 125,

Then

$$X+25=20*60=1200$$

Now

$$X+125=20*y=20y$$

Subtracting

$$125-25=20y-1200$$

$$20y=1300$$

$$y=65$$

Match the column

A histogram	is the diagram showing a system of connections or interrelations between two or more things by using bars
Discontinuous Frequency Distribution.	A frequency distribution in which the upper limit of one class coincides from the lower limit of the succeeding class
Continuous Frequency Distribution.	Is the bar graph such that the area over each class interval is proportional to the relative frequency of data within this interval.
A bar graph	Is a set of adjacent rectangles whose areas are proportional to the frequencies of a given continuous frequency distribution?
	A frequency distribution in which the upper limit of one class differs from the lower limit of the succeeding class