Lab 9 : Measures of Central Tendency

Learning Outcome: Student will be able to evaluate the mean, median, mode for the given data.

Blooms Taxonomy Level: BT3

1. In a survey of 35 families in a village, the number of children per family were recorded and the following data was obtained

1 0 2 3 4 5 6  
7 2 3 4 0 2 5  
8 4 5 12 6 3 2  
7 6 5 3 3 7 8  
9 7 9 4 5 4 3  
Represent the data in the form of a discrete frequency distribution.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | f | fx |  |  |
| No of children per family | No of families |  |  |  |
| 0 | 2 | 0 |  |  |
| 1 | 1 | 1 |  |  |
| 2 | 4 | 8 |  |  |
| 3 | 6 | 18 |  |  |
| 4 | 5 | 20 |  |  |
| 5 | 5 | 25 |  |  |
| 6 | 3 | 18 |  |  |
| 7 | 4 | 28 |  |  |
| 8 | 2 | 16 |  |  |
| 9 | 2 | 18 |  |  |
| 10 | 0 | 0 |  |  |
| 11 | 0 | 0 |  |  |
| 12 | 1 | 12 |  |  |
|  | 35 | 164 |  |  |
|  |  |  |  |  |
|  |  | MEAN | 4.687143 |  |
|  |  |  |  |  |

1. The marks obtained by 50 students are given below:

31 13 46 31 30 45 38 42 30 9  
30 30 46 36 2 41 44 18 29 63  
44 30 19 5 44 15 7 25 12 30  
6 22 24 37 15 6 39 32 21 20  
42 31 19 14 23 28 17 53 22 21

Create a frequency distribution table for the given data.

1. Calculate mean of the series  
   14100 14150 16080 17120 15200 16160 17400
2. Calculate the arithmetic mean of the marks from the following data by direct method and shortcut method

Marks: 0 – 10 10-20 20-30 30-40 40-50 50-60

No. of 12 18 27 20 17 6  
 students

1. Obtain the value of median from the following data of the monthly income of 10 employees of a company in Rs:

14,391 15,384 25,591 15,407 16,672 26,522 16,777 26,753 27,850 37,490.

1. Find the median of the given grouped data

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  | | --- | --- | | Age | No of worker | | 18-22 | 120 | | 22-26 | 125 | | 26-30 | 280 | | 30-34 | 260 | | 34-38 | 155 | | 38-42 | 184 | | 42-46 | 162 | | 46-50 | 86 | | 50-54 | 75 | | 54-58 | 53 | |  | 1500 | |

1. Following is the distribution of marks obtained by 50 students in Statistics. Calculate the median marks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks  (More Than) | 0 | 10 | 20 | 30 | 40 | 50 |
| No. of Students | 50 | 46 | 40 | 20 | 10 | 3 |

1. Calculate the mode from the following data

Sl. No. 1 2 3 4 5 6 7 8 9 10  
Marks10 27 24 12 27 27 20 18 15 3

1. Find the mode of the given data

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Sales | no of companies | | Below 60 | 12 | | 60-62 | 18 | | 62-64 | 25 | | 64-66 | 30 | | 66-68 | 10 | | 68-70 | 5 | | 70-72 | 2 | |  | 102 | |

1. Calculate mode from the following data:

Marks No. of Students  
Above 0 80  
Above 10 77  
Above 20 72  
Above 30 65  
Above 40 55  
Above 50 43  
Above 60 28  
Above 70 16  
Above 80 10  
Above 90 8  
Above 100 0 0